Report on the Consultation on options for revision of the EU Thematic Strategy on Air Pollution and related policies

Client: DG Environment

Rotterdam, 18 June 2013

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Summary

The public consultation on Options for the revision of the EU Thematic Strategy on Air Pollution and related policies ran from 10 December 2012 until 4 March 2013 (12 weeks) on the European Commission's 'Your voice in Europe' web pages. The consultation used two questionnaires: a total of 1934 individuals responded to a shorter questionnaire for the general public; for the longer questionnaire for experts and stakeholders, 371 responses were received.

The questionnaire for experts and stakeholders had 38 questions (not including sub-questions). Of these, 17 were open questions allowing written comments and the others were closed, multiple-choice questions. The questionnaire covered the following themes:

- Ensuring compliance with EU air quality requirements and coherence with international commitments
- Reducing exposure to damaging air pollution in the long term
- Revising the ambient air quality directive (AAQD)
- Revising the national emission ceilings directive (NECD); and
- Addressing major air pollution sources

The questionnaire for the general public had 13 questions covering all these themes except the last, air pollution sources. In order to provide comparability between the two questionnaires, 12 of the 13 questions on the questionnaire for the general public were closed, multiple-choice questions also used on the questionnaire for experts and stakeholders. The last question was an open question allowing written comments.

Strengths of the consultation responses include: the high number of responses from citizens and from experts and stakeholders; and responses received from a broad range of economic sectors, government bodies and NGOs. However, limitations should be noted: for example, relatively few responses were received to either questionnaire from EU12 Member States.

Key results from the consultation are presented in this summary for each of the themes covered by the consultation. For these themes, results are provided for the two questionnaires and also for the four main categories of respondents to the questionnaire for experts and stakeholders: business, government, NGOs and independent experts. The main body of the report provides further detail on the results.

Ensuring compliance with EU air quality requirements and coherence with international commitments

Regarding options to ensure Member State compliance with current air quality legislation, just over 90% of respondents to the questionnaire for the general public, along with over 80% of government, NGO and individual expert respondents to the questionnaire for experts and stakeholders, supported strengthening emissions controls (though few business respondents supported this option).

Reducing exposure to damaging air pollution in the long term

In terms of how future EU air pollution policy should interact with EU climate and energy policy, over 90% of respondents to the questionnaire for the general public, along with over 80% of government, NGO and individual expert respondents to the questionnaire for experts and stakeholders, supported the option that EU air pollution undertakes additional measures beyond synergies with climate and energy policy. A majority of business respondents, however, indicated that new air pollution action should not go beyond synergies with climate and energy policy.

Regarding the target year for a revised Thematic Strategy, just over 80% of NGO respondents and just over 60% of individual experts identified 2025. However, a majority of business and government respondents instead chose 2030.

In response to a question about the extent of progress for a revised Thematic Strategy, a majority of the respondents to the general public questionnaire (55%) chose 'maximum achievable pollution reduction' as the level of additional progress to be pursued, and 37% called for 'substantial progress' that is lower than the maximum reduction. On the expert/stakeholder questionnaire, a majority of NGO responses called for the maximum reduction; a majority of government responses called for substantial progress; and just over 45% of business responses called for the 'level delivered by the forthcoming climate and energy framework for 2030'.

A further question asked whether priority should be given to human health or the environment in air pollution policy. Just over two-thirds of general public responses indicated that equal weight should be given to human health and environmental impacts. About 60% of NGO and individual expert responses chose this option; almost 60% of government respondents, however, indicated human health impacts as the priority. A large share of business responses, 25.4%, chose 'other': in written comments, many of them referred to socio-economic factors.

Revising the Ambient Air Quality Directive (AAQD)

Over 80% of respondents to the general public questionnaire, similar shares of NGO and individual expert responses to the questionnaire for experts and stakeholders, and just over 55% of government respondents called for the indicative limit for PM2.5 to be mandatory. However, 55% of business respondents opposed this option.

High shares of public, NGO and individual experts also called for AAQD limit values to be made more stringent to bring them closer to WHO guidance values. Almost 60% of government respondents, however, indicated that this should happen 'once the EU has made further emissions reductions', and almost 50% of business responses called for 'no change' on this topic.

Regarding monitoring and regulation for black carbon, a majority of public, NGO and expert responses favoured both monitoring and a binding limit value; government respondents preferred either a non-binding target value plus monitoring, or only monitoring.

Regarding ozone limit values, a majority of NGO and expert responses indicated that current non-binding limit values for ozone should be replaced with binding limit values at more stringent levels. Just over 50% of business responses (50.9%) and over just 60% of government responses, however, preferred 'no change' in this area.

There was strong support for the option that zone-specific plans be consolidated into national plans: this option was favoured by almost 80% of respondents to the questionnaire for the general public, similar shares of NGO and expert respondents to the questionnaire for experts and stakeholders, and almost 60% of government respondents.

Revising the National Emission Ceilings Directive (NECD)

In the general public questionnaire, 91.2% of respondents indicated that national emission ceilings should be adopted for black carbon/elemental carbon; among the expert/stakeholder responses, over 60% of NGO and individual expert responses agreed with the option; in contrast, about 60% of business and 45% of government responses were opposed.

With regard to mechanisms for flexibility in the NECD management framework, a majority (64%) of respondents in governments indicated that compliance checking be made on multi-year average. This was supported also by business respondents (60%) but not by NGOs (under 7% support).

A majority of government respondents (60%) also supported the option to allow limited adjustment of the emission inventories after the approval by the Commission, but not of ceilings (only 19% support). The option to allow adjustment of the inventories also received some support from NGOs (34%) and business (46%).

Strong majorities of all respondents were in favour of coordination between national and local levels in respect to emissions reduction measures and local air quality management.

Addressing major air pollution sources

Only the questionnaire for experts and stakeholders included questions on sources.

Respondents were asked to rank measures to address emissions from road transport. The top-ranking option was to introduce with minimum delay the new test procedure to ensure that 'real world emissions of Euro 6 light duty diesel vehicles are as close as possible to the type approval limit values'. The second-ranking option was to improve 'in-service compliance with emissions standards'.

For non-road machinery, the top-ranking option was for 'a more stringent Stage V standard'. The second-highest was to 'ensure that approval emission tests reflect ... emissions in real world circumstances'.

For measures to address emissions from the agricultural sector, NGO and individual expert responses gave the highest average ranking (i.e. lowest score) to the option, 'Set tighter emission ceilings for ammonia for 2020 and 2030 in the NEC Directive, leaving flexibility to Member States on how these ceilings can best be reached'. Government responses gave the highest average ranking to the option: 'Where cost effective, introduce new or revise existing EU legislation to establish EU-wide specific rules for e.g. improved manure storage, management and spreading techniques'. Business responses gave the highest average ranking to: 'Promote good practices in manure management and manure spreading in Member States through support from the Rural

Development Fund'. In written comments, representatives of the agricultural sector emphasised that new measures should mainly take through this fund.

A majority of NGO respondents and over 40% of government and individual expert respondents supported two options to address emissions from **small and medium combustion installations** (i.e. below 50 MW).

> *Develop a supplementary and more stringent standard for installations below the Ecodesign capacity threshold for use in national and local measures such as fiscal incentives to be applied in zones that are in non-compliance with air quality limits.*
>
> *Regulate combustion installations above the Ecodesign capacity threshold but below the 50MW threshold set in the Industrial Emissions Directive (IED).*

For business responses, however, the highest share of responses, about one-quarter, went to '*Don't know*', followed by '*No additional measures*' (just under 20%).

Two options to address emissions from the **shipping sector** were chosen by at least 50% of government, NGO and individual expert responses:

> *Promote the extension of the Sulphur Emission Control Areas to additional EU sea areas such as the Irish Sea, the Gulf of Biscay, the Mediterranean and/or the Black Sea provided that such a measure is cost-effective.*
>
> *Promote the designation of NOx Emission Control Areas in EU regional seas where cost-effective (those listed above and/or the Baltic and the North Sea including the English Channel) provided that such a measure is cost-effective.*

None of the options regarding shipping were supported by more than 24% of business responses. In written comments, respondents from the shipping industry as well as some other government sectors stated that shipping should be regulated through the International Maritime Organisation.

1 Introduction

The public consultation ran from 10 December 2012 until 4 March 2013 (12 weeks) via the European Commission's 'Your voice in Europe' web page.[1] The consultation used two questionnaires: a short questionnaire for the general public and a longer version for experts and stakeholders. All of the quantitative (i.e. multiple choice) questions for the general public were also found in the longer questionnaire for experts and stakeholders. Both questionnaires were available in English only, as was the Commission's background document for the consultation, also provided on the 'Your voice in Europe' web page.

Two initiatives prior to the consultation gathered public and stakeholder views on EU air pollution and air policy. In September 2012, over 25,000 European citizens across all Member States were interviewed in a Eurobarometer survey on air quality.[2] In 2011, three surveys were carried out – of stakeholders, air quality experts and citizens – focusing on the revision of the Ambient Air Quality Directive (AAQD, 2008/50/EC).[3] The results of this consultation for the Thematic Strategy on Air Pollution (TSAP) can thus be considered together with the results of these surveys. In comparing the results, it is important to note that the consultation is a formal process open to all interested citizens and stakeholders, and thus is different in method to surveys based on samples.

Sections 2.1 and 2.2 below present an overview of the respondents to the two questionnaires. Sections 2.3 and 2.4 summarise the methodology for analysis of the responses, and in particular the comments received on open questions. Sections 3 through 8 then present responses for each of the main topics addressed in the consultation.

1.1 Overview of respondents to the questionnaire for the general public: results from the introductory questions

A total of 1934 individuals responded to the questionnaire for the general public.

Question A: country of residence

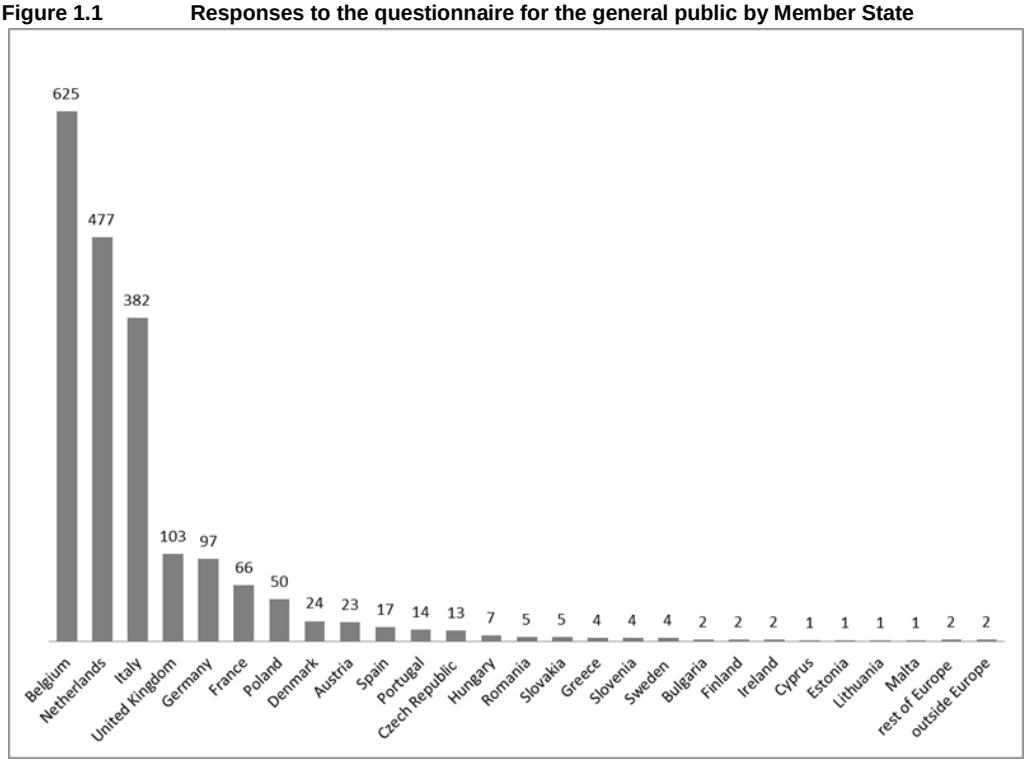
The questionnaire for the general public was filled out by 1930 respondents residing in 25 EU Member States (all except Latvia and Luxemburg). A further two respondents reside in Europe but outside the EU Member States; another two reside outside Europe. Member States particularly well represented are Belgium (625 responses, or 32% of the total), Netherlands (477 responses, 25%), Italy (382 responses, 20%), and the United Kingdom (103 responses, 5%): these four together account for 82.1% of the responses (see the figure below). Overall, 95% of responses came from the EU15, while in 2012, according to Eurostat, the EU15 accounted for almost 80% of the total EU population.

[1] See http://ec.europa.eu/environment/consultations/air_pollution_en.htm

[2] TNS Political & Social, Flash Eurobarometer 360: Attitudes of Europeans towards air quality (for the European Commission), January 2013. Available at: http://ec.europa.eu/public_opinion/flash/fl_360_en.pdf

[3] Van den Hout et al, Survey of views of stakeholders, experts, and citizens on the review of the EU Air Policy (TNO report for the European Commission), May 2012

Figure 1.1 Responses to the questionnaire for the general public by Member State



Question B asked for the name of the respondents.

Question C: Do you now work on air pollution issues, or have you done so in the past?

For 343 respondents (or 17.7%), air pollution is or had been an area of their professional work.

Question D: What type of area do you live in?

The respondents indicated that:

- 59.1% live in a large city
- 23.4% in a town or small city
- 10.1% in a suburban area and
- 7.3% in a rural area.

According to Eurostat, approximately 40% of the EU population lives in predominantly urban areas, 36% in 'intermediate' regions (towns and suburbs) and less than 5% in rural areas.[4] While the self-reported responses may not correspond directly to Eurostat categories, the responses overall appear to roughly match the overall EU distribution of population in these categories.

[4] See: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Statistics_on_European_cities

1.2 Overview of respondents to the questionnaire for experts and stakeholders: results from the introductory questions

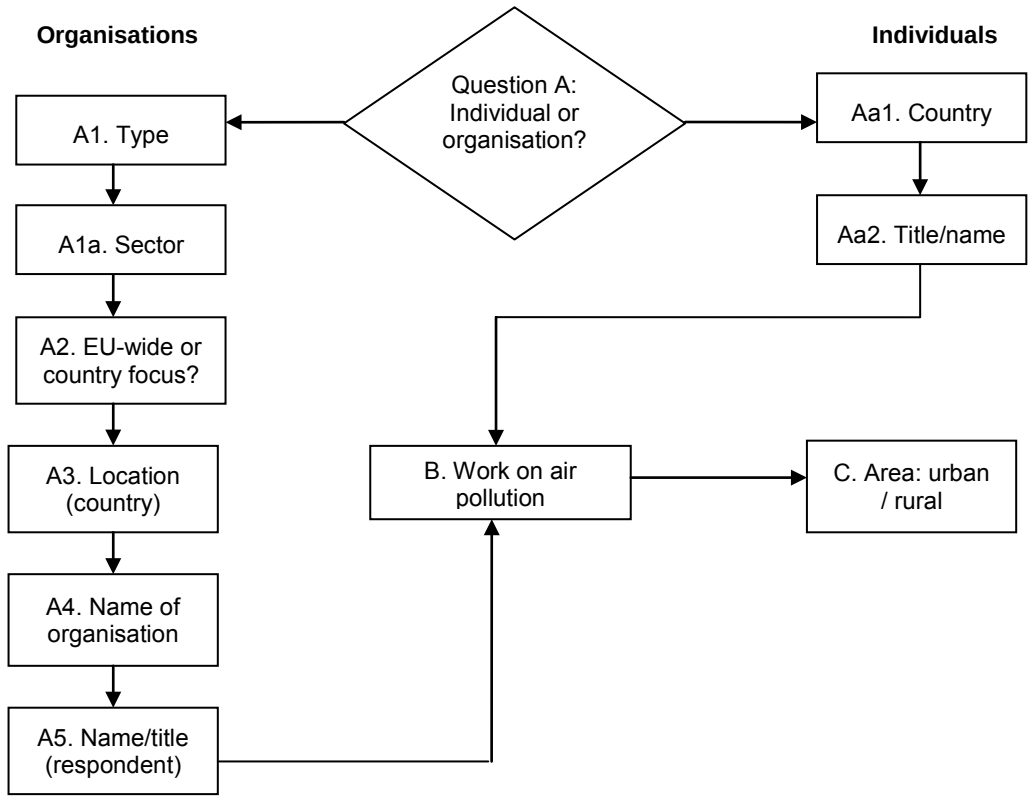
For the questionnaire for experts and stakeholders, 371 responses were received.[5]

Question A: Are you responding to this consultation as an individual or on behalf of an organisation?

Of the 371 responses, 229 were submitted on behalf of an organisation; and the remaining 142 responses were submitted on behalf of an individual.

Organisations and individual experts were asked different follow-up questions. The flow chart below provides an overview of these background questions. .

Figure 1.2 Sequence of the background questions



[5] Originally 369 contributions were submitted within the consultation deadline. Six contributions were subsequently deleted by the survey administrator: one was a duplicate record; another was an evident hacking attempt; the other four were deleted because the respondents indicated in their comments that they were not the appropriate respondents for the questionnaire. Eight contributions were added by the survey administrator: these contributions were sent by stakeholder organisations and experts to the European Commission via email, rather than submitted through the online system.

Follow-up questions for organisations:

Question A1: What type of organization do you represent?

114 respondents represented a business entity. Respondents could choose one of six business sub-categories:

- An industrial interest group, business association or sectoral association (80);
- A large enterprise (26);
- A medium-sized enterprise (2);
- A small enterprise (0);
- A micro enterprise (10);
- Self-employed (4).

42 respondents responded on behalf of a government, either at:

- national level (11),
- regional level (26), or
- local level (5).

No responses were submitted on behalf of an international organisation.

61 responses were submitted on behalf of the non-governmental sector organisations (comprising of civil society groups, environmental groups, consumer groups and charities).

In terms of the research sector, 1 respondent represented a public research institution; and 2 respondents represented a private research institution. The remaining 9 respondents that represent an organisation chose the answer option 'other'.

In sections 4 onward, results are presented both for the expert/stakeholder responses as a whole and separately for business, government, NGO and expert responses. Due to their small numbers, however, responses for the research sector and others are not presented.

Question A2: Does your organisation work mainly on an EU-wide basis or in a single country?

business (114)	Number of responses	% responses
EU-wide	55	48.3%
Focus on a single country	47	41.2%
Other	12	10.5%

non-governmental sector (61)	Number of responses	% responses
EU-wide	20	32.8%
Focus on a single country	36	59.0%
Other	5	8.2%

Almost one-half of business respondents and nearly 60% of NGO respondents come from organisations that work mainly on an EU-wide basis. (The government responses indicated that nearly all their organisations worked on a national basis, as could be expected.)

Question A3: Please indicate the country where your organisation is located

The table below provides an overview of the responses by country.

	All Experts / Stakeholders	Organisations				Other	Individual experts
		Business	Governments	NGOs	Research institutions		
Austria	15	6	4	2			3
Belgium	94	31	3	17		1	42
Bulgaria	2	1					1
Czech Republic	5	3		2			
Denmark	8	6		1			1
Estonia	1		1				
Finland	4	4					
France	33	13		10		1	9
Germany	70	18	12	10		4	26
Greece	2				1		1
Hungary	1			1			
Ireland	2		1	1			
Italy	40	5	6	2		1	26
Netherlands	18	4	4	2	1	1	6
Poland	4	1		1			2
Portugal	4	1					3
Romania	1						1
Slovakia	3			3			
Slovenia	3			1			2
Spain	17	6	2	1			8
Sweden	6	3	1	1			1
United Kingdom	33	11	5	6		1	10
Norway	2		1		1		
Switzerland	1		1				
Outside Europe	2					2	

All organisation responses (229)

Overall, the organisations represented are located in 21 of the 27 EU Member States. (No organisations responded from Cyprus, Latvia, Lithuania, Luxembourg, Malta and Romania.) The Member States with the greatest number of organisations responding are: Belgium (22.7% of respondents), Germany (19.2%), France (10.5%), and the UK (10.0%). These four Member States together represent 62.4% of all organisation responses.

Business responses (114)

The business sector organisations are located in 15 of the 27 EU Member States, with a high number from Belgium (27.2%), Germany (15.8%) and France (11.4%).

Government responses (42)

Government responses came from 11 of the 27 EU Member States, with a large proportion from Germany (12 responses or 28.6%), Italy (6 responses or 14.3%) and the UK (5 responses or 11.9%).

Non-governmental sector responses (61)

The non-governmental sector organisations responding to the questionnaire are located in 16 of the 27 EU Member States. The highest number is from Belgium (17 responses of 27.8%), followed by France (10 responses or 16.4%) and Germany (10 responses or 16.4%).

Follow-up on question A for individual experts:

Question Aa1: Please indicate your country of residence

Responses of individual experts (142)

The individual experts who responded reside in 16 of the EU Member States. A large proportion reside in Belgium (42 experts or 30% of all individual experts), Germany (26 experts or 18.3%) and Italy (26 experts or 18.3%).

Information from both experts and stakeholders:

Question B: Do you now work on air pollution issues, or have you done so in the past?

All expert/stakeholder responses

	Number of responses	% responses (371)
Yes, air pollution has been the main focus of my professional work	112	30.2%
Yes, air pollution has been one issue in my professional work	204	55.0%
No	55	14.8%

business responses

	Number of responses	% responses (114)
Yes, air pollution has been the main focus of my professional work	18	15.8%
Yes, air pollution has been one issue in my professional work	93	81.6%
No	3	2.6%

government responses

	Number of responses	% responses (42)
Yes, air pollution has been the main focus of my professional work	32	76.2%
Yes, air pollution has been one issue in my professional work	10	23.8%
No	0	0.0%

the non-governmental sector responses

	Number of responses	% responses (42)
	19	31.2%
Yes, air pollution has been one issue in my professional work	39	63.9%
No	3	4.9%

individual experts

	Number of responses	% responses (142)
Yes, air pollution has been the main focus of my professional work	38	26.8%
Yes, air pollution has been one issue in my professional work	56	39.4%
No	48	33.8%

Nearly all the respondents to the experts and stakeholders survey indicated that air pollution had been either the main focus or one focus of their professional work. Curiously, about one-third of the individual experts indicated that air pollution had not been a focus of their professional work. It is possible some are involved in air pollution issues outside of work, e.g. in volunteer groups including NGOs.

Question C: What type of area do you live in?

Individual experts (only) were asked to choose **one** response. The respondents indicated that:

- 45.8% live in a large city
- 26.8% in a town or small city
- 16.9% in a suburban area and
- 10.6% in a rural area.

This breakdown is broadly similar to that for the general public, though with slightly more respondents from suburban areas and less from large cities.

1.3 Methodology for assessing the written comments to the open question in the questionnaire for the general public

While most questions used closed, multiple-choice answers that allow quantitative analysis, both questionnaires had open questions where respondents could provide written comments. The questionnaire for the general public had a single question at the end, allowing respondents to provide any comments. In contrast, the questionnaire for experts and stakeholders had several open questions: these focused on the main themes of the consultation. A final open question allowed respondents to provide any further answers.

The open nature of the question for the general public and the high number of responses has required a structured approach to analysis, which is presented here.

Number of written comments

Overall, 883 respondents from 22 countries – just under 50% of all respondents – provided a comment.

Figure 1.3 Written comments to the questionnaire for the general public, by Member State

Member State	Number
Netherlands	270
Belgium	251
Italy	156
United Kingdom	53
Germany	41
France	31
Poland	25
Denmark	13
Austria	12
Spain	7
Czech Republic	6
Portugal	5

Member State	Number
Slovakia	4
Greece	2
Sweden	2
Bulgaria	1
Cyprus	1
Malta	1
Slovenia	1
Outside Europe	1
TOTAL	883

Three Member States - the Netherlands (270), Belgium (251) and Italy (156) – together accounted for just under 77% of the comments (see the table below). A further six Member States – the United Kingdom (53), Germany (41), France (31), Poland (25), Denmark (13) and Austria (12) – provided a further 20% of the written comments. In total only 4% of the comments come from the EU12.

Approach to the analysis

The analysis of these written comments used a semi-quantitative approach. As the question was open, a four-step process was used. In the first step, a set of main topic categories and subcategories were defined based on the overall topics addressed in the questionnaire.

In the second step, an initial sample of about 50 comments was reviewed in order to identify additional categories and subcategories that were cited frequently: for example, many comments referred to air pollution sources, a topic not included in the original list as this was not addressed in the questionnaire for the general public (questions on sources were found only on the expert/stakeholder questionnaire). As a result, this and a few other topic categories and sub-categories were added for the analysis of the written comments on the general public questionnaire.

In the third step, all answers were coded by category and sub-category for each mention of a topic. As comments were often very broad and their meanings diverse, they could not always be associated with exactly a single category or subcategory. For example, the statement “E-cars should be subsidized.” was coded as “technology and products” as well as “financial incentives”, both subcategories of “mechanisms for emission reduction”.

After coding the comments, the results were totalled in the fourth step .

These results are provided in the sections that follow. For each major topic, the number of comments mentioning specific categories and sub-categories are presented. In addition, a selection of quotes from the comments are also provided to illustrate the types of comments received. These are not representative (the results of closed, multiple-choice questions provide an overview of respondent positions on key points), but rather provide an overview of the types of comments. (See, for example, the last page of section 4, which describes the comments on MS compliance with EU legislation and overall coherence with international commitments.)

Patterns in the written comments

Several patterns were seen. These suggest that some groups of citizens had been informed or informed each other about the consultation. In a few cases, the same wording was used by several respondents, indicating that their responses were in some way organised.

- The most notable pattern was seen in 126 responses from the Netherlands and Germany. These provided the same text which, as one respondent stated, originated from the Dutch citizens' organisation Milieu Defensie. The shared comment called on the European Commission to control emissions from certain sectors; a revised NECD with higher ambition levels than the revised Gothenburg Protocol; new objectives for the ambient air quality that match WHO standards; and infringement actions by the European Commission where limits are not met.
- Another large group of respondents from Belgium (around 80) referred to poor air quality in Antwerp due to traffic. Among these, 20 cited the results of a study on the effects of air pollution on health in Antwerp. These responses used the same text.
- Many of the comments from respondents in France focused on air traffic pollution, presenting similar in the arguments.
- 26 comments received from Italy were quite similar. These referred to several pollutants and sources.

It should be noted that these patterns influence the results. For example, many of the references to automobiles and non-road vehicles discussed traffic problems in Antwerp. Therefore, these grouped responses have been identified in the presentation of results.

Overview of the most important topics

The most frequently mentioned topics were

- Automobiles as a source of air pollution (287 respondents)
- Health issues related to air quality (227 respondents)
- Heavy duty vehicles (223 comments)
- The uptake of international standards, such as WHO standards (168 comments)
- The revision of the NECD (155 comments)
- Better enforcement and inspection by Member States as a means to reduce emissions (125 comments) and
- Local health concerns related to air quality (123 comments).

1.4 Methodology for assessing the written comments to the questionnaire for experts and stakeholders

Number of written comments

Nearly all respondents to this questionnaire provided written comments, though the extent of comments varied significantly. Individual experts provided fewer comments than the other main categories (business, government and NGOs).

Methodology

Respondents to the questionnaire for experts and stakeholders had the opportunity to express comments at the end of each topic and sub-topic section. Overall, there were 18 open questions where respondents could provide comments. As the questions referred specifically to the topics of the section, these results are presented in this fashion.

Unlike the written comments to the questionnaire for the general public, those by experts and stakeholders were not analysed in a semi-quantitative fashion for the following reasons: first, all but the last open question focus on specific topics; and second, the category of respondents was felt to

be more important than the raw number of responses on a specific issue. The main focus was to present the different issues raised and to identify patterns and common views.

The analysis thus summarises comments by stakeholder group (business, government, NGO and individual experts). Moreover, sub-groups are also identified, in particular the specific industrial sector for business responses and the Member State and level of administration for government responses.

Where patterns emerge, these are presented: for example, for several questions, respondents from one business sector make a common statement; in other cases, views are shared among many responses from a group of stakeholders.

Some expert and stakeholder comments are directly quoted in the report. These quotes are intended to illustrate the type and range of comments made in the consultation.

Finally, the analysis only provides a summary review of written comments. The descriptions of these comments seek to present the main positions expressed for each open question; however, it has not been possible to make an exhaustive presentation of all positions.

Patterns in the responses

In several cases, a set of comments for a single question provided similar or identical answers. These cases are described where they occur.

In addition, several NGOs at both EU and Member State levels made similar comments on many (though not all) open questions, often using the same text. These organisations included:

- ZA MATKU ZEM (For Mother Earth Slovakia)
- Centre for Sustainable Alternatives (Slovakia)
- Verkehrsclub Deutschland Landesverband Bayern e.V. (German Automobile Club, Bavaria)
- ClientEarth (UK)
- European Environmental Bureau, EEB (BE)
- Fundacja ClientEarth Poland (PO)
- Clean Air Action Group (Levegő Munkacsoport) Hungary (HU)
- Centre for Transport and Energy (CZ)
- Deutsche Umwelthilfe e.V. (German Environmental Relief)
- Deutscher Naturschutzring (DNR) - German League for Nature and Environment
- France Nature Environnement
- Air Pollution & Climate Secretariat (SE)

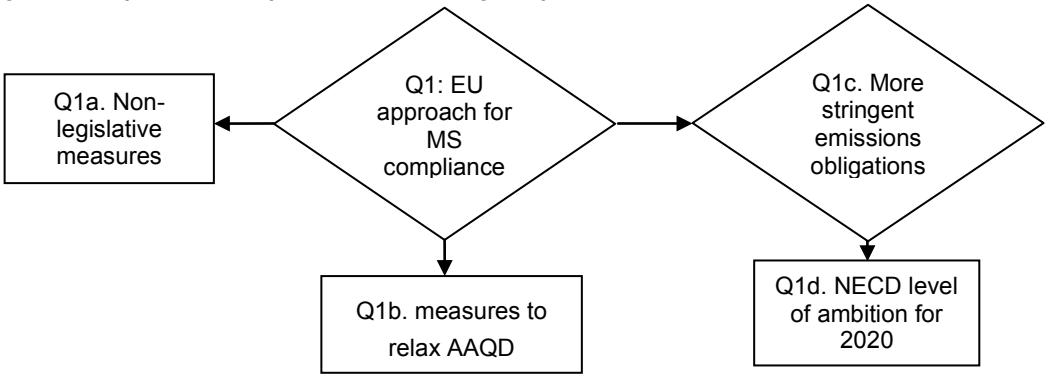
Three further NGOs frequently used the same text but requested that their responses be anonymous. A small number of responses by individual experts (8 for most questions) also echoed the main NGO positions.

2 Ensuring compliance with EU air quality requirements and coherence with international commitments in the short term

In the questionnaires, the introduction to this theme noted current issues of non-compliance, in particular for the Ambient Air Quality Directive 2008/50/EC (AAQD) for several pollutants and also for the National Emissions Ceilings Directive 2001/81/EC (NECD) with regard to NOx (nitrogen oxides) ceilings.

The section had one closed, multiple-choice question, with four sub-questions, and one open question, as shown in the flow chart below. These questions were found in both questionnaires. The questionnaire for experts and stakeholders also had an open question.

Figure 2.1 Sequence of the questions on ensuring compliance



Question 1: How should the EU modify or supplement its approach to ensure compliance with current air quality legislation?

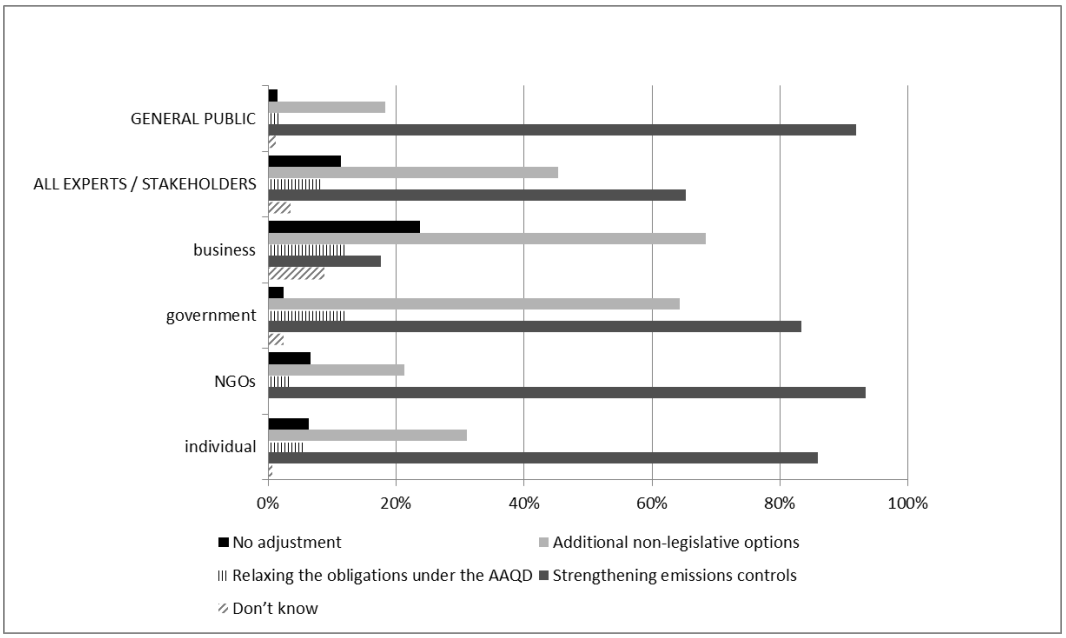
Respondents were asked to choose one or more responses. The analysis is based on the total number of responses, 1934 for the questionnaire for the general public and 371 for the questionnaire for the questionnaire for experts and stakeholders. This is the total response level for subsequent questions, except where indicated.

The figure below shows the responses received to the two questionnaires. For the questionnaire for experts and stakeholders, responses for the four main sub-groups – business, government, NGOs and individual experts – are also presented. Please note that for presentation, the options are abbreviated in the chart. The full options can be found in the questionnaire, presented in Annex II.

Among respondents to the questionnaire for the general public, a great majority were in favour of strengthening emissions controls (92% of respondents). The next most popular response was to introduce additional non-legislative options (note that here as for many questions, respondents could choose more than one option): this was selected by 18.3% of respondents.

For experts and stakeholders, strengthening emissions controls received the largest number of responses (65.2%). When looking at the sub-groups of respondents to the experts and stakeholders questionnaire, this option was chosen by over 80% of government, NGOs and

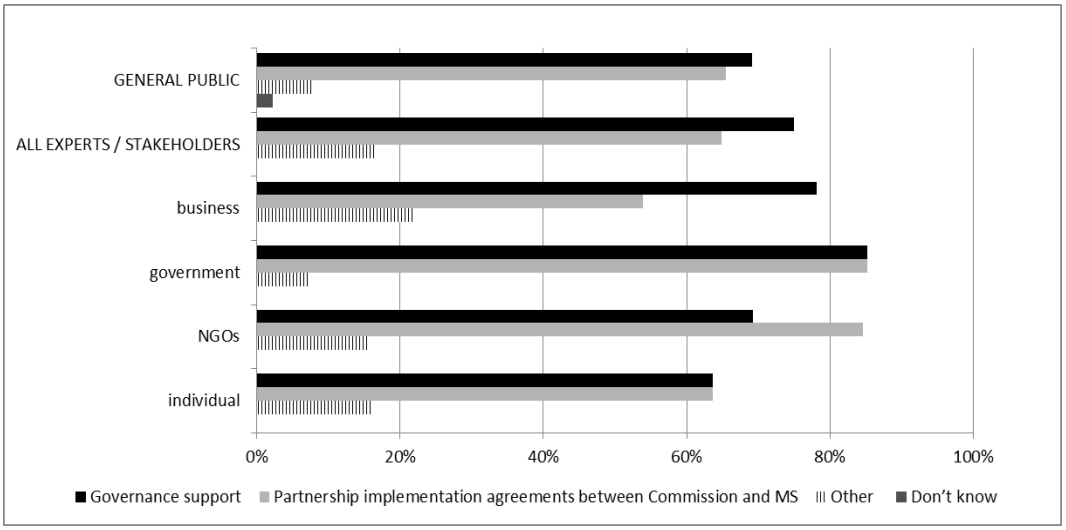
individual expert responses, but only 17.5% of business responses. The option for 'additional non-legislative options' was chosen by 45.3% of all respondents to this questionnaire, and a majority of both business and government responses. Among business responses, however, non-legislative options received the highest response (68.4%), with only 17.5% in favour of strengthening emissions controls.



Note: here and on all subsequent questions, except where otherwise specified, the percentages refer to: 1934 total respondents to the questionnaire for the general public, and 371 total responses to the questionnaire for experts and stakeholders. The total responses to the main sub-categories for the latter questionnaire are: business (114 responses); government (42); NGOs (61); and individual experts (142).

Question 1a: Which options should be considered as additional non-legislative measures?

This question was asked to respondents who chose the option 'Additional non-legislative options' in Question 1. The total number of responses is 353 for the general public and 168 for experts and stakeholders. Respondents were asked to choose **one or more** responses for this question.

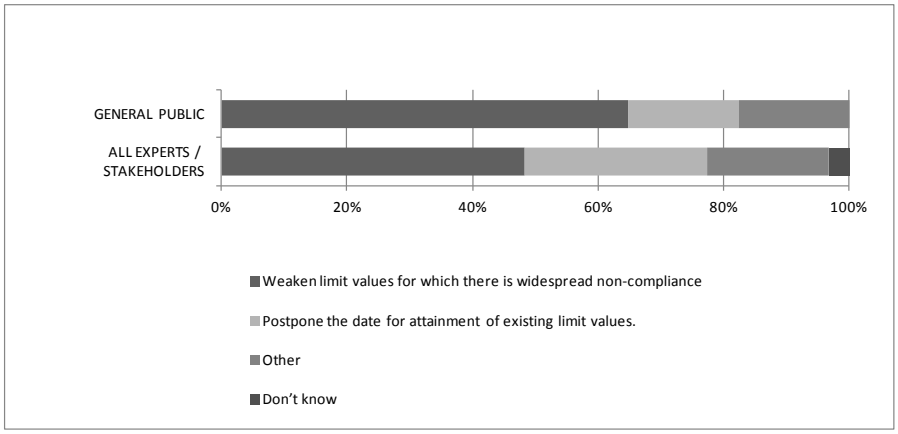


Note: Based on 353 responses on the questionnaire for the general public, and 168 for experts / stakeholders.

For respondents to the *general public* questionnaire who indicated non-legislative options in Question 1, both '*Governance support*' and '*Partnership implementation agreements*' received high levels of support (over 65%). These two options both received a majority of support also from expert and stakeholder respondents, with the highest support from government respondents. Please note that the number of NGO responses to this question is low (13). Also, none of the expert and stakeholder respondents chose '*Don't know*'.

Question 1b: Which options should be considered to relax obligations under the AAQD?

This question was only asked to respondents who chose the option *'Relaxing the obligations under Ambient Air Quality Directive'* in Question 1. In total, 34 responses were received on the general public questionnaire and 31 on the experts/stakeholders questions. Respondents were asked to choose one response.

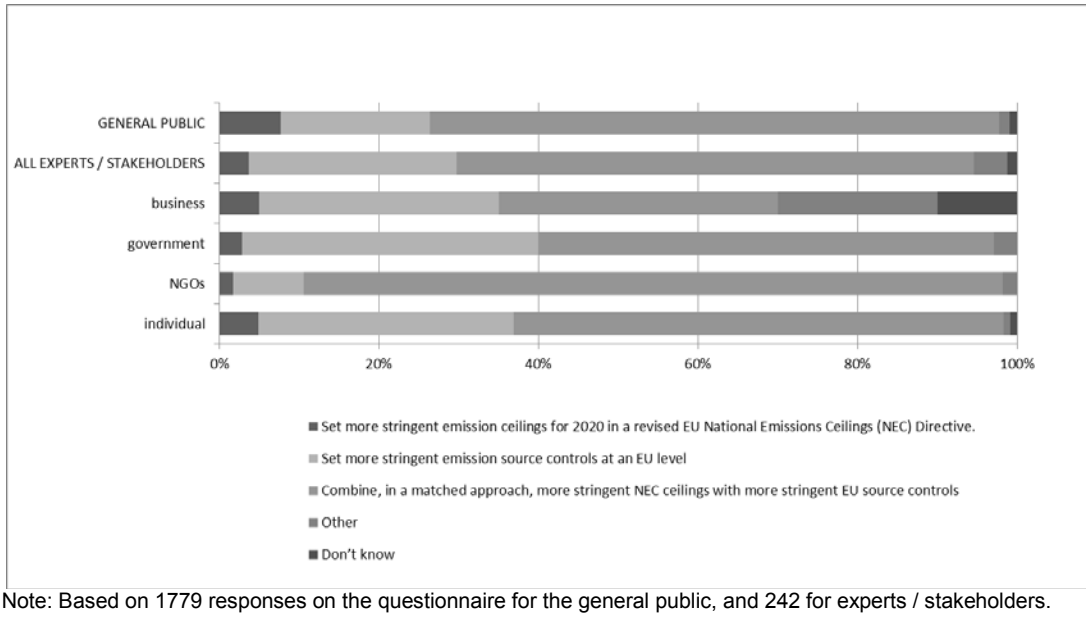


On this question, it should be noted that the response numbers are low, as few respondents on either survey chose the option to relax AAQD obligations in question 1. For respondents to both questionnaires, the option to '*Weaken those air quality limit values for which there is currently widespread non-compliance (in particular PM and NO_2)*' received the most responses. (The sub-groups within the expert/stakeholder questionnaire are not evaluated due to the low response numbers.)

Question 1c: Which options should be considered to set more stringent obligations on air pollution emissions?

This question was only asked to respondents who chose the option 'Strengthening emissions controls: for example more stringent emissions ceilings or source controls that support the attainment of air quality limit values' in Question 1. There were 1779 responses to the questionnaire for the general public and 242 in the questionnaire to experts and stakeholders.

Respondents were asked to choose **one** response.



Note: Based on 1779 responses on the questionnaire for the general public, and 242 for experts / stakeholders.

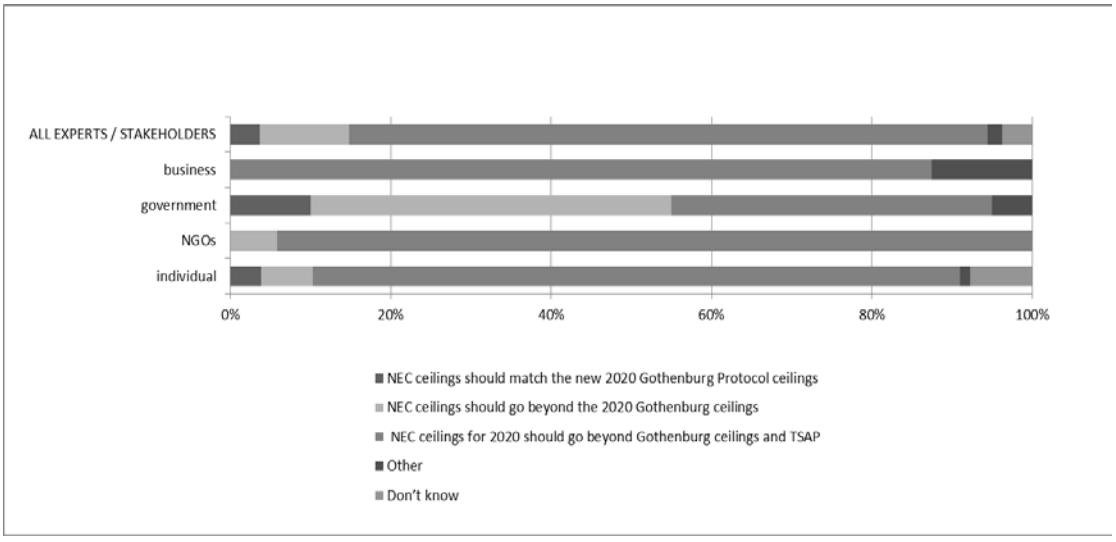
In both questionnaires, the option to 'Combine, in a matched approach, more stringent national ceilings under the NEC Directive with more stringent source controls at EU level' received strong support (over 60% of respondents on each). Among business respondents, however, this option received only one-third of responses).

The option to '*set more stringent emission source controls'* was second but much less popular (one-quarter of expert/stakeholder responses, but less than one-fifth of those from the general public).

Question 1d: What further level of ambition (if any) should the revised NEC Directive aim for in 2020?

This question was only asked to respondents who chose the option 'Set more stringent emission ceilings for 2020 in a revised EU National Emissions Ceilings (NEC) Directive.' or the option 'Combine, in a matched approach, more stringent national ceilings under the NEC Directive with more stringent source controls at EU level' in Question 1c.

This question was only asked in the questionnaire for experts and stakeholders. In total, there were 166 respondents. Respondents were asked to choose **one** response.



Note: 166 responses for all experts / stakeholders.

Over three-quarters of the expert/stakeholder responses indicated that '*The NEC Directive ceilings for 2020 should go beyond the 2020 Gothenburg ceilings and the Thematic Strategy*'. Support among business and NGO respondents for this option was even higher; however, it should be noted that this question had few business respondents (8 in total). Less than 40% of government respondents, however, chose this option, and slightly more than 40% indicated instead that '*The NEC Directive ceilings for 2020 should go beyond the 2020 Gothenburg ceilings in order to achieve the objectives in the Thematic Strategy on Air Pollution*'.

Question 2: Open qualitative responses on the course of action to ensure compliance with the current air quality legislation

Respondents to the questionnaire for experts and stakeholders could provide written comments in response to this question.

A recurring comment in many **business** responses was to call for the achievement of current AAQD limits and NECD ceilings rather than the development of more stringent ones. Many of these comments stated that the NEC directive should not go beyond the 2020 limits fixed by the Gothenburg protocol, to ensure consistency between EU and international standards. In addition, many business respondents stated that no new ceilings should be fixed for 2020, as they would not allow enough time for the industry to adapt; and the review of the TSAP should thus focus on 2030.

Several responses from heavy industries, including the steel sector, as well as some from coal and mining and from multi-sector associations, called for greater consistency across EU legislation related to air pollution, in particular regarding the obligations set for industries. One comment, for example, stated that: 'an integrated approach in which the interaction of measures with other existing and future obligations are checked would avoid repetitive and contradictory regulations'. Some of these responses cited in particular the role of the Industrial Emissions Directive as it takes into account 'environmental objectives, local conditions and economic aspects'.

Respondents from the power and heating industry stated that the electricity sector has already contributed significantly to the reduction of emissions, and that new limits should focus on sectors that have contributed less.

A number of **government** responses called attention to local conditions (population density, financial means, climatic conditions) when assessing compliance.

For example, one comment stated that:

> *'exceedence of air quality limit values (especially by PM_{10} and NO_2) should not be considered as breaches in areas, where a member state proves to have taken all appropriate measures to reduce the exceedence to a minimum and to achieve compliance step by step.'*

Several representatives of local authorities stated that municipalities can only be held responsible for emissions that they are genuinely able to influence. Regional diversity, transboundary pollution and the variety of regional competences should be taken into account. They added that fines should not be '*handed down*' to local authorities, as their means are limited.

Several government responses, notably regional and local authorities, called for support including funding, more research and technological solutions.

A number of comments supported the idea of partnership agreements between Member States and the Commission, also potentially involving regional and local authorities.

The common response by several EU and MS **NGOs** (see section 2.4) stated that AAQD limits set ten years ago are not adequate anymore: these responses are in favour of more stringent limits for all sectors, and especially the most polluting ones such as agriculture, domestic heating, transport and industry. They called for EU policy action in these sectors as it would '*would speed up compliance, reduce the number of infringement cases and help ensure implementation of measures which would reduce overall abatement costs*'. These as well as a number of other NGO responses were in favour of accelerating infringement procedures for non-compliant Member States. Many saw these procedures as '*the most appropriate method of ensuring compliance with current limits*' and not to undermine the credibility of the air quality directive.

Individual experts proposed a variety of approaches to improve compliance, including: more stringent technical standards, such as those for vehicles; better traffic management solutions, including proposals for a ban or tax on diesel in cities; rail transport to replace heavy duty goods vehicles; and a European speed limit on highways.

Questionnaire for the general public: written comments on Member States compliance with EU legislation and coherence with international commitments

Although the questionnaire for the general public did not include an open question focused on this topic, several responses to the final question on that survey – which asked for any comments on the revision of the TSAP – addressed the issue. As described in section 2.3 above, the analysis of these written comments looked the frequency that specific topics are mentioned.

Comments by the general public addressed three broad sub-categories of topics related to the overall theme of this section:

Reduce Member States' non-compliance	192
National implementation	63
Uptake international standards	168

In total, 192 comments mentioned non-compliance, alluding especially to infringement actions from the European Commission and to a lesser extent to penalties for non-compliant Member States. This result was highly influenced by respondents from the Netherlands, which represent 72% of all comments in this category. Respondents from the United Kingdom, Belgium and Germany were also sensitive to this issue. Among the comments were the following (these and other quotes are presented only as illustrations, and are not intended to be representative of written comments):

> *'The United Kingdom MUST be fined for its breach of air quality standards. Sanctions MUST be taken against the UK for these breaches.' (UK)*

> *'EU should strengthen the pressure on the each EU member government responsibility to comply the limits for pollutants. Members like CZ don´t follow the restrictions and thus the air pollution is much higher and dangerous for the citizens than in other countries.' (CZ)*

Regarding national implementation, 63 answers referred to problems such as a lack of commitment of national institutions for reducing air pollution and the incapacity to ensure measures are taken at local level. This totals are strongly influenced by Italian respondents who cited a failure of the Italian government to draft a national plan on air pollution. Other comments included the following:

'Member States like the UK should be required to put in place a serious comprehensive strategy to address air pollution in the long term.' (UK)

'There's a need to name and shame policy makers, governments, local leaders making decisions that will increase air pollution and road traffic.' (BE)

Finally, 168 respondents mentioned that the EU should align with international standards; among these, 162 referred to the WHO guidelines values for the concentration of pollutants that cause most damage to health.

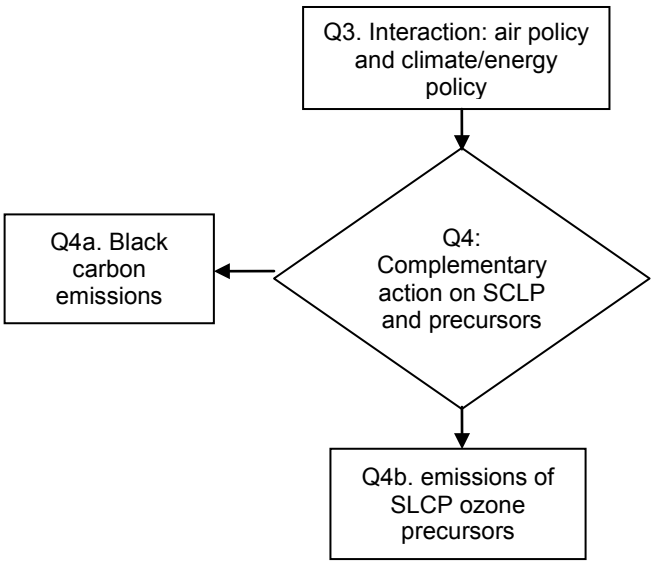
'The European Commission must propose the following actions in 2013: New objectives for ambient air quality with the aim of reaching the ambition level of at least the latest WHO recommendations' (NL)

3 Further reducing exposure to damaging air pollution in the medium to long term

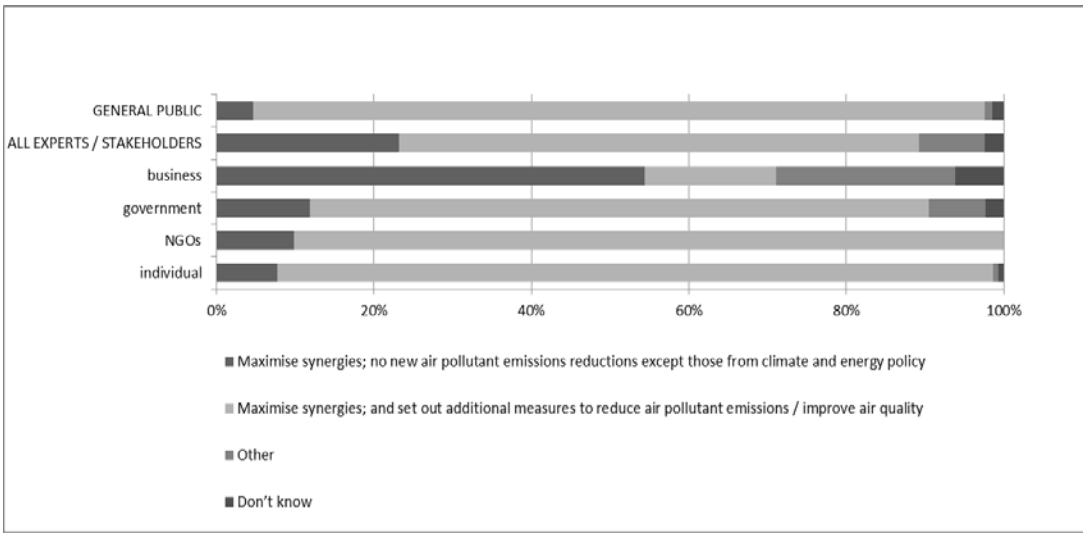
3.1 Ensuring coherence between air pollution and climate change policies

This section contained two main closed questions; the second, on short-lived climate pollutants (SCLP) had two follow-up closed questions (see the flow chart below). These questions were found in both questionnaires. The questionnaire for experts and stakeholders also had an open question.

Sequence of questions on coherence between air pollution and climate change policies



Question 3: How should future EU air pollution policy interact with a new climate and energy framework for 2030? Respondents were asked to choose **one** response.

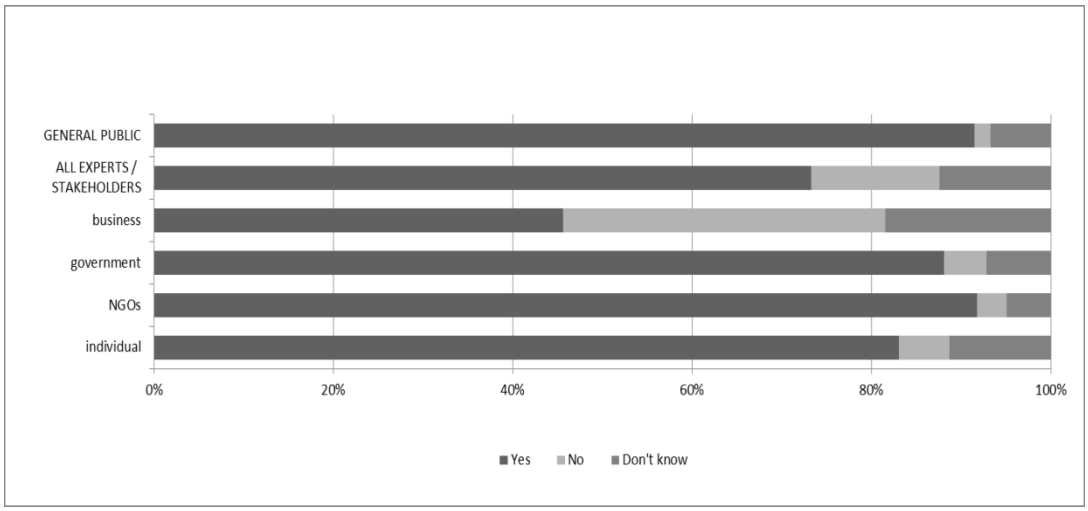


Over 90% of respondents to the survey for the general public indicated that future EU air pollution policy should set out additional measures, i.e. beyond maximising the synergies with climate and energy policy. This option was chosen by two-thirds of the expert/stakeholder respondents; however, among these, only 19 business responses (16.7%) chose this option, in contrast to strong majorities of the government, NGO and expert respondents.

Just over 50% of the business respondents instead chose the option to maximise synergies with climate and energy policy with '*no new air pollutant emissions reductions*'. Business respondents in particular proposed other options.

Question 4: Should specific complementary action in the EU be pursued to curb emission of short-lived climate pollutants (SLCP) and their precursors, to improve both air quality impacts on health but also to boost climate mitigation in the short term?

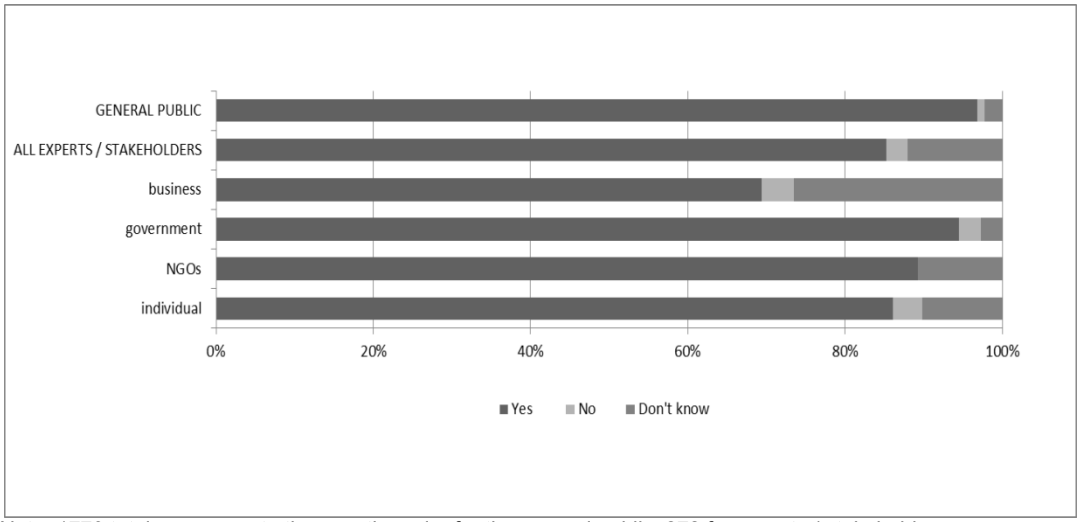
Respondents were asked to choose **one** response.



Just over 90% of the respondents to the general public questionnaire, and almost 80% of respondents to the expert/stakeholder questionnaire, were in favour of complementary EU action to curb emissions of short-lived climate pollutants (SLCPs) and their precursors. On the expert/stakeholder questionnaire, the government, NGO and individual expert sub-groups all expressed strong support in favour. Only 45.6% of business respondents were in favour, however.

Question 4a: Should specific complementary action be pursued to curb black carbon emissions?

This question was only asked to respondents who chose the option '*Yes*' in Question 4. There were 1770 responses for the questionnaire to the general public, and 272 to the questionnaire for experts and stakeholders. Respondents were asked to choose **one** response.



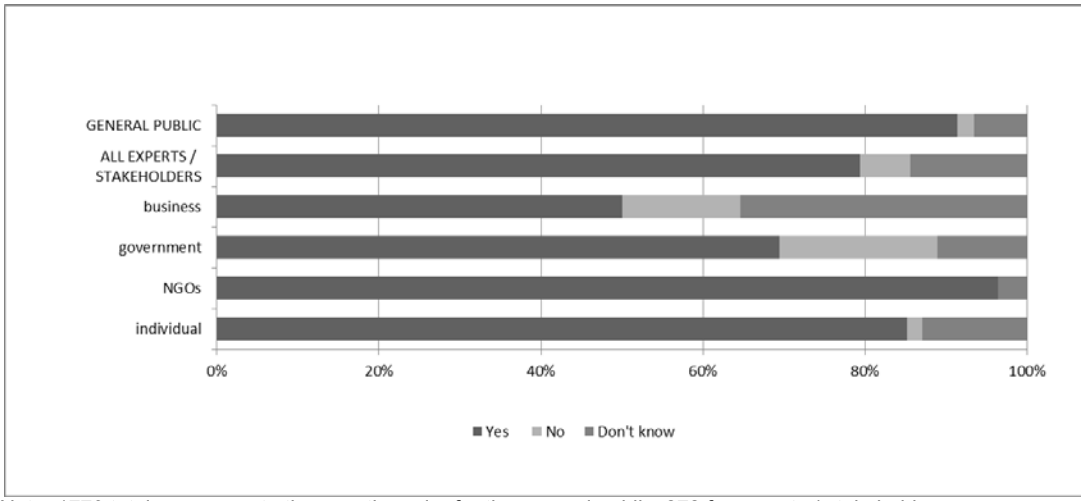
Note: 1770 total responses to the questionnaire for the general public; 272 for experts / stakeholders.

Strong majorities – 95% of general public respondents and 80% of expert/stakeholder respondents – were in favour of specific action to curb black carbon emissions. A majority of each expert/stakeholder subgroup was in favour; however, on this question, one-quarter of business respondents chose '*Don't know*'.

Question 4b: Should specific action to address ozone precursors that are short-lived climate pollutants, such as methane, be reinforced?

This question was only asked to respondents who chose the option 'Yes' in Question 4. There were 1770 responses for the questionnaire to the general public, and 272 to the questionnaire for experts and stakeholders.

Respondents were asked to choose **one** response.



Note: 1770 total responses to the questionnaire for the general public; 272 for experts / stakeholders.

Strong majorities – 90% of general public respondents and 75% of expert/stakeholder respondents – were in favour of specific action to curb ozone precursors that are SLCP, such as methane. Among business respondents, however, support was just under 50%, and almost one-third chose '*Don't know*'.

Question 5: Comments on the interaction between air pollution and climate change policies

Respondents to the questionnaire for experts and stakeholders could provide written comments in response to this question.

Many **business** comments stated that the energy and climate framework (including possible future international agreements) should set the frame for air pollution policy. Some of these comments argued that further EU action on air pollution should not be too prescriptive, stating that flexibility is needed to attract investors and ensure international competitiveness and that further regulations would put a burden especially on SMEs.

Comments from respondents in the air transport and shipping industries also underlined that air pollution issues for their sectors are the mandates of international bodies, ICAO and IMO respectively. Comments from the agricultural sector warned against the inclusion of methane in the NEC directive, as that would not be cost effective for the sector.

Some business respondents called for better measurement and research on impacts before setting further limits. In addition, some respondents referred to the language in the revised Gothenburg Protocol on black carbon and asked for better knowledge on monitoring, inventories and transboundary contributions before setting further limits.

Many **government** comments called for priority to be given to the protection of public health when climate measures (e.g. promoting diesel and biomass) have negative side effects on air quality. Many also stated that sources and pollutants which affect both climate and air quality should be better controlled. Across these responses, the following sources were cited: fossil fuel combustion, domestic heating, open wood/agricultural burning, inland shipping and non-road mobile machinery. The pollutants cited include methane, black carbon and ozone precursors.

Many government responses referred to better control of diesel and biomass combustion in order to tackle such black, elemental, organic or total carbon emissions. Some government respondents, however, mentionned the absence of effective and unambiguous measurements of black carbon: some state that complementary EU action on this pollutant cannot yet be taken; others referred instead to elemental, organic, or total carbon, calling for increased monitoring of these as a basis for regulation.

A few comments addressed the possible inclusion of methane in the NECD. For example, two respondents – DEFRA in the UK and one German government body – opposed the inclusion of methane, arguing that existing international agreements are sufficient. Another German response and Belgian responses argued that it should be included as an incentive for international action. Many respondents suggested specific complementary actions to reduce black carbon emissions.,

One comment from the UK stated that industry should be encouraged to stay in Europe and warned that if it moves to Asia this is unlikely to benefit air pollution or climate change.

The common comments from EU and MS **NGOs** (see section 2.4) called for air quality to be the priority if climate measures have negative side effects on air quality. These and some other NGO comments furthermore referred to health impacts, citing recent reports by WHO, UNEP and others on air pollution and health.

Many NGO comments also called for action on pollutants and sources that affect both climate and air quality, including fossil-fuel power stations and the transportation sector. One respondent warned that methane emissions from hydraulic fracturing could become significant.

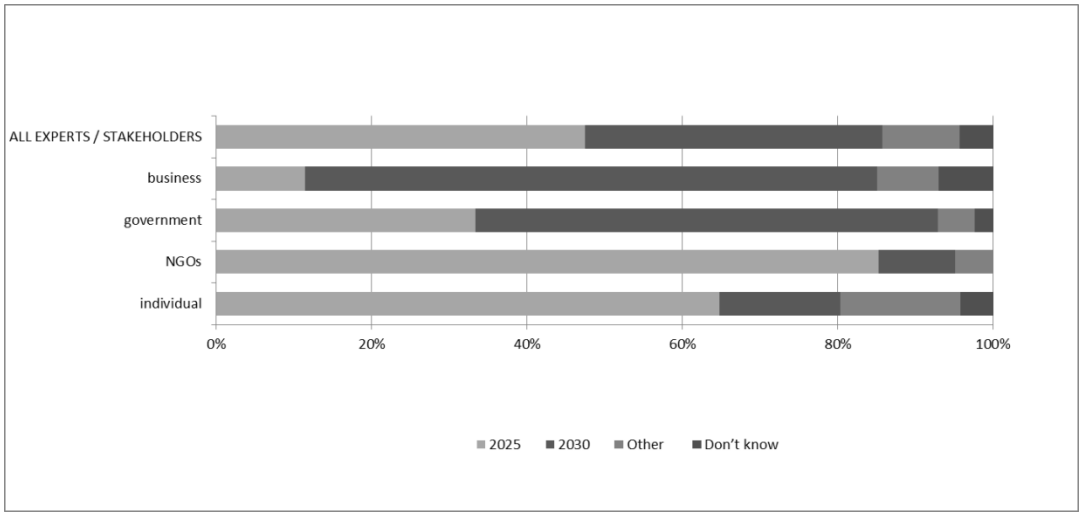
Some individual experts also called for more stringent targets on pollutants that affect both air quality and the climate. Some individuals demanded sector-specific measures, including stricter emission standards for fossil-fuel fired power, heating and waste treatment plants, motor vehicles and the aviation industry. Some also called for a transition to renewable energies. Other underlined that better transport and traffic management is needed. Finally, one expert warned that stricter legislation might hamper economic growth.

3.2 Strategic approach and target year of future air pollution policy

This section had two closed, multiple-choice questions. The first question, only asked on the experts and stakeholders questionnaire, had a follow-up question. The second question was asked on both questionnaires. The questionnaire for experts and stakeholders also had a closing, open question.

Question 6: Which target year should be the main focus of the revised Thematic Strategy?

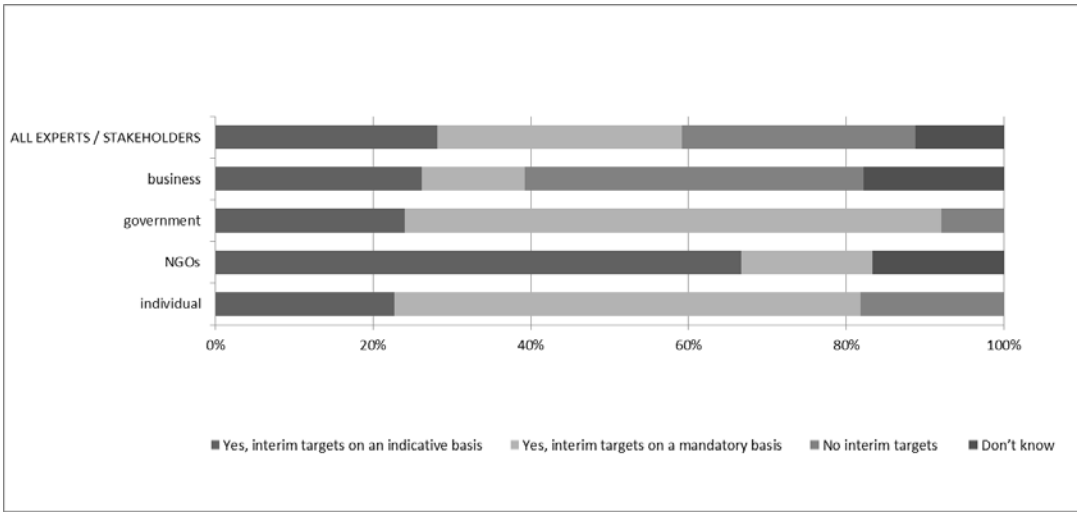
This question was only asked on the expert/stakeholder questionnaire. Respondents were asked to choose one response.



For the expert/stakeholder respondents as a whole, just under half chose 2025 as a target year, while almost 40% chose 2030. A majority of NGO and individual respondents chose 2025; a majority of business and government respondents instead chose 2030.

Question 6a: If the target year is 2030, should the EU set an interim target for Member States to achieve for 2025 to strengthen the achievement of the 2030 objective?

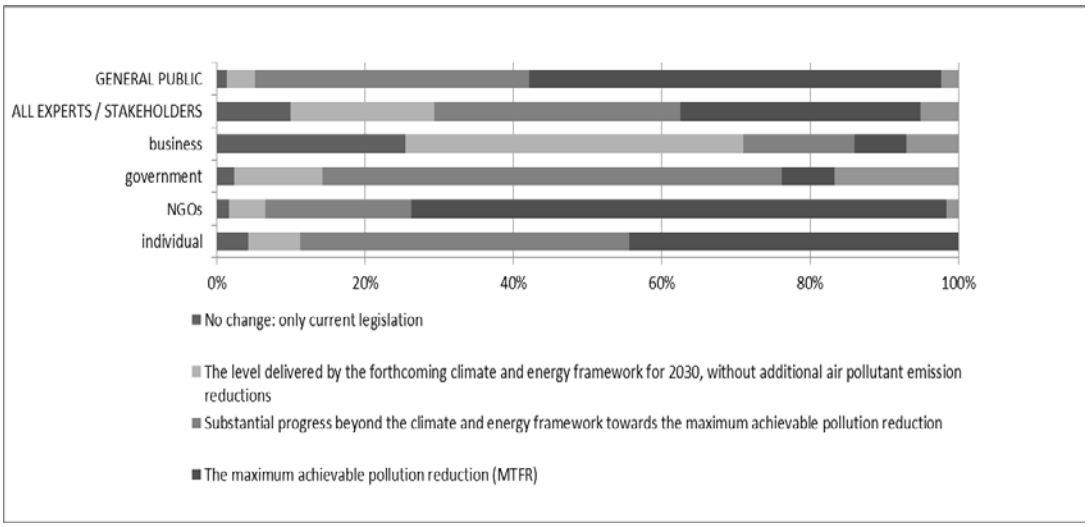
This question was asked on the expert/stakeholder questionnaire. Respondents were only asked to respond if they chose the option '2030' in Question 6. In total, there were 142 responses. Respondents were asked to choose one response.



For the respondents as a whole, more or less equal shares indicated each of the three options. Two-thirds of NGOs respondents indicated that '*interim targets should be set on an indicative (i.e. voluntary) basis)'*. In contrast, a majority of government and individual respondents indicated that such targets should be set on a mandatory basis. For business respondents, the largest share (over 40%) said that interim targets should not be set.

Question 7: How much additional progress should EU air pollution policy pursue in the revised Thematic Strategy?

This question was asked on both surveys. Respondents were asked to choose **one** response.



A majority of the respondents to the general public questionnaire (55%) chose '*maximum achievable pollution reduction*' as the level of additional progress to be pursued, and 36.9% called for '*substantial progress*'. On the expert/stakeholder questionnaire, these two options each received about one-third of responses. A majority of NGO responses called for the maximum reduction, a majority of government responses called for substantial progress, and individual experts gave each about 44%.

For the expert/stakeholder responses as a whole, just under 20% chose the '*level delivered by the forthcoming climate and energy framework for 2030*'; however, this option was indicated by 45.6% of responses from business.

Question 8: Please feel free to provide comments on the level of ambition.

On this option question, many **business** respondents called for attention first to the implementation of and compliance with existing legislation before the development of new EU legislation. Also frequently mentioned was a call for the evaluation of current EU policies (such as the NEC Directive and the IED) before defining further levels of ambition and legislative measures.

Many business responses stated that cost-effectiveness should be a priority for further measures and pointed out to the current difficult economic situation and to the necessity of global competitiveness.

A national agriculture association stated that MTFR could endanger agricultural productivity, food security, global competitiveness of EU production and called for evaluation of the costs of MTFR for economic sectors and burden-sharing among them. At EU level, Copa-Cogeca commented that further measures aiming at reduce GHG emissions would '*shift the production away from the EU and export emissions to countries outside the EU*'.

Respondents from the mining and steel industry and some national multi-sectoral associations stated that measures should be only those set within the IED framework and that the main aim should be to achieve globally comparable conditions by international conventions to avoid an impact on global market conditions.

A few business respondents called for a sectoral approach to any new targets.

One comment called for 2050 as a target year, as it is used in recent roadmaps for other sectors prepared by the European Commission.

Government respondents presented a wide range of comments. A number cited the current economic difficulties, stating that cost-effectiveness is crucial for further measures: some underlined that MTFR is unrealistic for these reasons. A comment from the Swedish Environmental Protection Agency stated that it is difficult to agree on ambitious goals in the current economic and political climate and suggested shorter-term goals (e.g. 2025) be set now, with more ambitious longer-term goals to be considered in the future.

Other comments, however, stressed the importance of public health and called for a further reduction of air pollutants that goes beyond the climate and energy framework.

One comment from a German national body stated that

> *'the time horizon should be 2025, because otherwise, the compliance deadline is too far away to exert the requisite momentum needed to support enforcement and implementation of efficient measures on a local level; apart from long-term city planning, most local measures have a shorter time frame for implementation.'*

The comment from Belgium stated that MTFR only takes into account current technologies, not future developments, and moreover that non-technical measures could also play an important role in emission reductions, especially for transport emissions.

The common comment by EU-wide and national **NGOs** (see section 2.4) stated that the set of technical abatement measures included in the MTFR is too limited to achieve the WHO guidelines and levels, and therefore

> *'…the full application of MTFR needs to be combined with structural changes, such as energy efficiency and savings, fuel switch (from fossil to renewables), and behavioural change (e.g. changed transport patterns, less meat consumption). Such structural changes, supported also by EU FUNDS (2014-2020), ECO-DESIGN and Green Public Procurement are necessary to achieve the policy objectives for both air pollution and climate change.'*

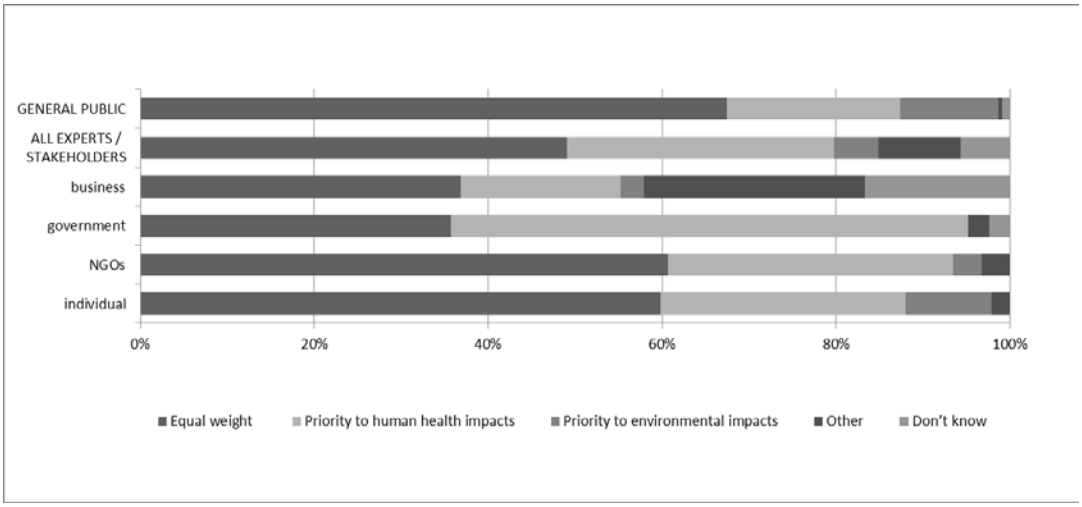
In addition, 8 **individual experts** also presented this statement. Other individual expert comments varied significantly, and included: calls for early target years; reference to the financial benefits of more stringent targets by reducing health expenses; the opportunity for economic development from cost-effective climate and air quality protection measures; and concerns for the competitiveness of EU industry.

3.3 Setting priorities

This section contained a single multiple-choice question, presented on both questionnaires. In addition, the questionnaire for experts and stakeholders contained an open question allowing written comments.

Question 9: How should EU air pollution policy give priority to addressing either human health or the environment?

This question was asked on both questionnaires. Respondents were asked to choose **one** response.



Just over two-thirds of general public responses and 49.1% of expert/stakeholder responses indicated that equal weight should be given to human health and environmental impacts. Almost 60% of government respondents, however, chose human health impacts as the priority.

A large share of business responses, 25.4%, chose '*other*' (see question 10).

Question 10: Comments on setting priorities

This open question was asked to experts and stakeholders. There were few comments.

Among **business** respondents, many of those who answered '*equal weight to both*' in question 9 underlined in their comments the synergies between addressing human health and environment.

Several business respondents that gave priority to human health in question 9 (mainly respondents from the automotive industry) mentioned in question 10 that environmental impacts should be addressed as well.

A few business respondents answered '*other*' in question 9: among these, respondents from the steel industry, air transport and several multi-sector associations stated that socio-economic factors should be the third pillar for priority setting regarding air pollution and that all three should be equally treated and that these have not received sufficient consideration so far.

Several respondents stressed the necessity to assess local situations to determine the level of priority, and generally to give priority to '*hotspots*'.

Several government respondents who chose '*Give priority to addressing human health impacts*' in question 9 underlined the need not to underestimate impacts on environment while giving priority to human health. Some government respondents who answered in question 9 that equal weight should be given to environment and health mention in question 10 that a better assessment of impacts should be undertaken and that regional variations should be considered.

NGO comments underlined the interconnections between environment and health, stating that reducing environmental impacts will benefit human health. At the same time, many NGOs also stated that '*the main objective at short-term is to reduce the impact on public health*' due to high health costs. Several NGO comments stated that stressing the impacts on human health increases awareness-raising and so is more efficient. One comment, however, affirmed that '*priority action needs to be focused on critical situations / areas / exposures rather than choosing between human health or ecosystems*'.

In their comments, individual experts also underlined the link and synergies between addressing human health and the environment. For example, most of this group that chose priority to environment in question 9 stated in question 10 that this approach will have positive consequences on human health.

Comments by respondents to the questionnaire for the general public

Although this questionnaire did not contain an open question focusing on the topic, some responses to the final question asking for 'any' further comments addressed the trade-off between health and environment. In total, 29 comments specifically referred the balance between environment and health: of these, the great majority (28) prioritize environment.

However, over one-quarter of all comments made a reference to either health or environmental impacts, even though most do not refer to the balance between the two. These topics were cited in the following numbers:

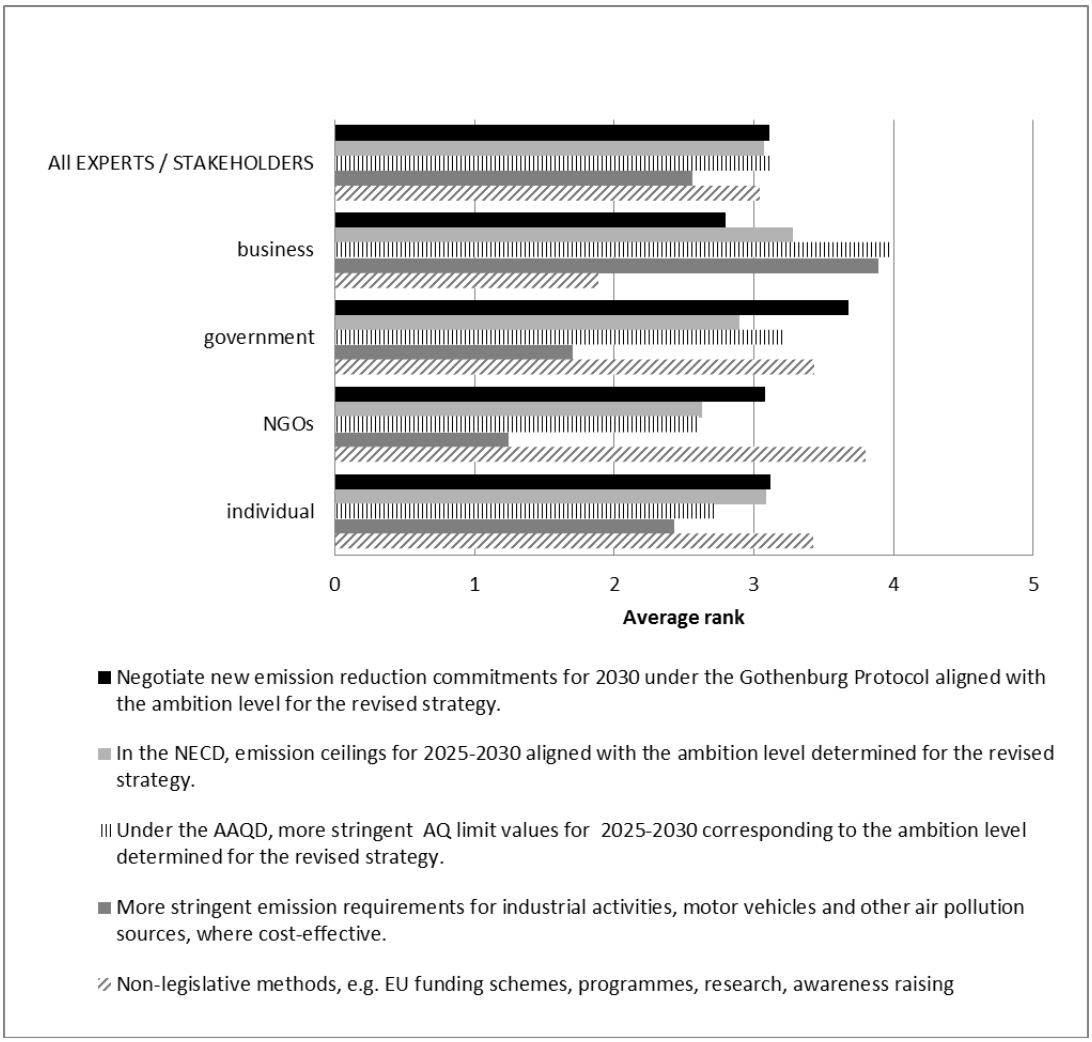
Both health and environment	40
Health	227
Environment	7

3.4 Choice of policy instruments

The two questions in this sub-section, one closed and one open, were only found in the questionnaire for experts and stakeholders.

Question 11: Which of the following policy instruments should be given priority to achieve the environmental and health objectives in the period up to 2030?

This question was asked on the expert/stakeholder questionnaire. Respondents were asked to **rank as many of the options as they wished** in other of preference from 1 (most preferred) to 6 (least preferred). The average rank is displayed for each of the options, where score 1 is the highest possible and 6 is the lowest possible score.



Note: a *lower* score indicates a higher ranking.

In the average ranking across all expert/stakeholder respondents, the five options received quite similar scores (averages from 2.56 to 3.12). The highest ranking (i.e. lowest average score) was given to '*EU legislation on emission sources'*. This option came almost 0.5 points in front of the next, '*non-legislative methods*'. This option for '*EU legislation on emission sources'* received the highest ranking from government, NGO and individual expert responses. In contrast, business responses gave '*non-legislative methods*' the highest ranking.

Question 12: Which other instruments should be used?

Several **business** comments, such as from AmCham EU (American Chamber of Commerce to the European Union), referred to international instruments (i.e. conventions and agreements) in the areas of air transport and shipping. A few respondents referred to the Industrial Emissions Directive (IED) as an efficient framework to address air pollution.

About one-third of business comments mentioned non-legislative measures. Some of these highlighted measures not specified in Question 11, including: voluntary agreements; financial incentives to promote cleaner technology and retrofitting of older vehicles; funding schemes to support low-emission zones; and taxes on emissions, such as the sulphur and NOx taxes in Sweden.

Among **government** responses, two from local authority associations (the Council of European Municipalities and Regions, CEMR, and the Dutch Association of provincial authorities) referred to partnership agreements between the EU, Member States and associations of local and regional authorities as a valuable instrument.

Another government comment called for attention to reducing emission outside of Europe, including in Asia, as an additional instrument for consideration.

Several government comments referred to financing, and one suggests that '*EU-subsidies in certain areas should be linked to compliance with appropriate environmental requirements*'.

The **NGO** comments cited several mechanisms for consideration in addition to those listed as options in Question 11. These included: energy efficiency and savings, fuel switching, reduction of road traffic, also via road pricing and congestion charges' or the promotion of public and sustainable transport and limits to maximum speed and maximum power of motor vehicles. A few NGO comments called for fuel and emission taxes, as well as taxes per kilometre of transport for products. Others referred to enforcement and infringement procedures. One comment called for the creation of a '*fiscal/financing mechanism to reward MS acting correctly and on the contrary an unfavourable financing mechanism on not diligent MS on AQ*'.

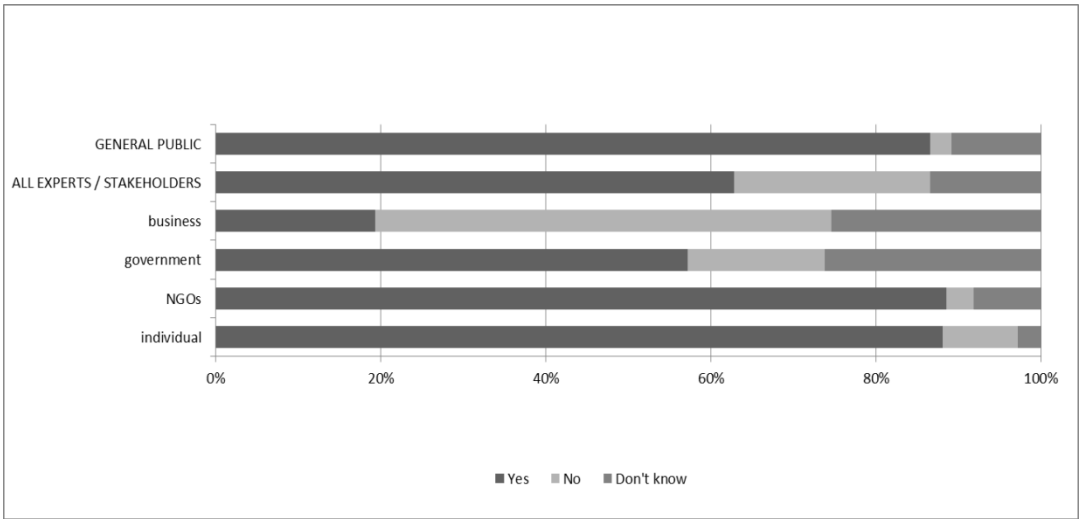
4 Revising the Ambient Air Quality Directive

4.1 Aligning with latest scientific and technical knowledge

This sub-section contained two closed, multiple-choice questions, which were asked on both questionnaires.

Question 13: Should the indicative limit value for PM2.5 of 20 µg/m3 for 2020 be made mandatory?

Respondents were asked to choose **one** response

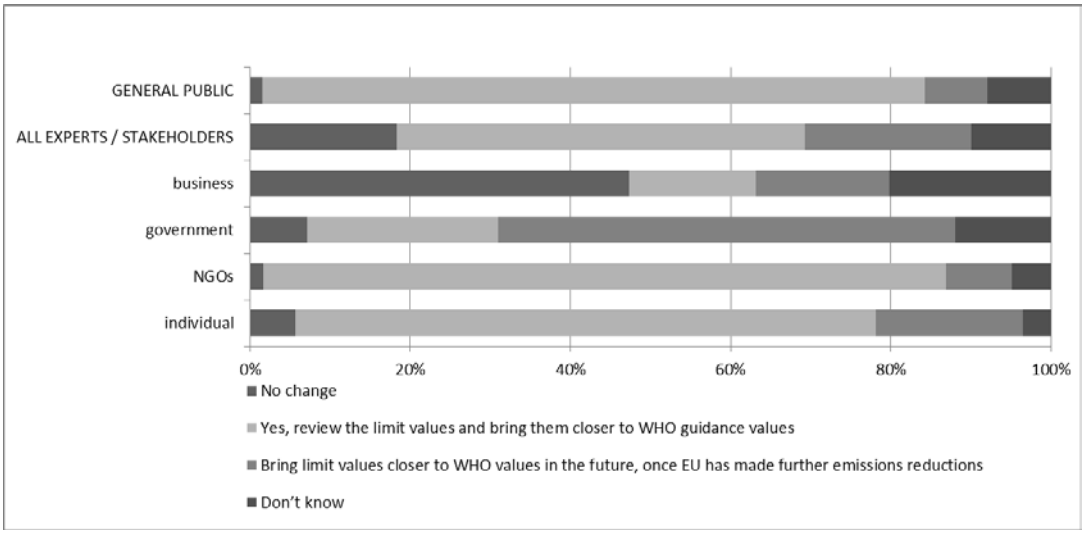


Just over 86% of respondents to the general public questionnaire indicated that the indicative value for PM2.5 under the AAQD should be mandatory, along with just over 62% of respondents to the expert/stakeholder questionnaire. In the sub-groups for the expert/stakeholder questionnaire, a majority of government, NGO and individual expert responses were in favour; 55.3% of business responses were opposed.

Question 14: Should the PM2.5 or other limit values in the AAQD be made more stringent to bring them closer to WHO guidance values?

Respondents were asked to choose **one** response.

In the questionnaire for the general public, 82.6% of respondents were in favour of bringing PM2.5 and other AAQD limit values closer to WHO guidance values, along with 50.9% of responses to the experts/stakeholder questionnaire. Among the sub-groups responding to the latter questionnaire, this position was supported by a large majority of NGO and individual expert responses. However, 57.1% of government responses chose the option to move closer to WHO values '*once the EU has made further emissions reductions*'. A large share of business responses, 47.4%, called for no change.

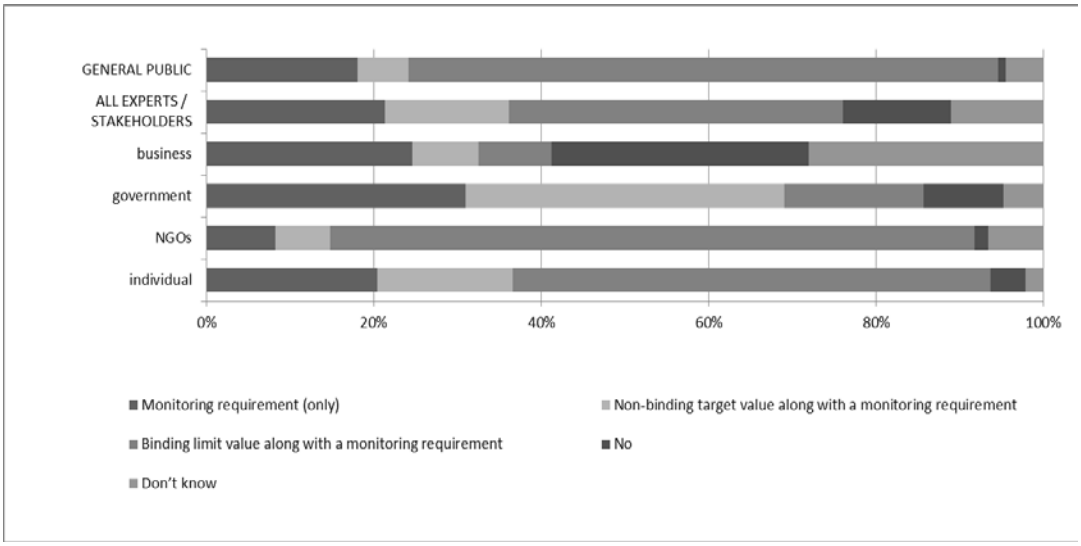


4.2 Aligning with latest scientific and technical knowledge (black carbon)

This section included one closed, multiple-choice question, presented on both questionnaires, and an open question, found only on the questionnaire for experts and stakeholders.

Question 15: Should monitoring and regulation be introduced for black carbon/elemental carbon?

Respondents were asked to choose **one** response.



Over 70% of the general public responses and almost 40% of the expert/stakeholder responses called for a binding limit along with a monitoring requirement. This option was supported by a majority of NGO and individual expert responses. However, 38.1% of government representatives chose a non-binding target value, along with a monitoring requirement, and 31.0% only called for a monitoring requirement. Among business responses, over 30% were opposed to action in this area, and almost a similar number chose '*Don't know'.*

Question 16: Should any other components of particulate matter be addressed in the AAQD?

Respondents to the questionnaire for experts and stakeholders could provide comments for this question.

Many **business** respondents did not support addressing other components. Several responses clearly stated that no other pollutants should be added in the AAQD. Many others called for further research on PM10 and PM2.5 compositions and the health effects of components before any decision are taken (including for black carbon).

Comments from the shipping industry referred to IMO's ongoing work regarding the impact of black carbon emissions from ships on the Arctic environment and state that EU actions on black carbon should not be taken before results are available. One comment from the air transport industry referred to ultrafine particles, noting that their impact on health is '*poorly understood*' at present.

Several **government** comments also stressed the lack of knowledge on the toxicity of each component of particulate matter; some call for a standardized methodology for black carbon measurement.

Some respondents – including regional bodies in Italy and regional and national bodies in Germany – called for addressing total carbon, which can be measured without ambiguity, rather than to black carbon.

NGOs and individual experts, as well as a few governmental bodies were in favour of an EU framework for the monitoring of **ultrafine and nanoparticles**, along with an EU wide particle number limit.

Several comments from governments, NGOs, and individual experts called for attention to additional pollutants, including: polycyclic aromatic hydrocarbon (PAH), cadmium, nickel and arsenic, volatile organic compounds (VOCs) and inorganic secondary components such as nitrate, sulphate and ammonia. A research organization, the Leibniz Institute for Tropospheric Research, stated that Benzo(a)pyrene should be monitored in all regions and regulated.

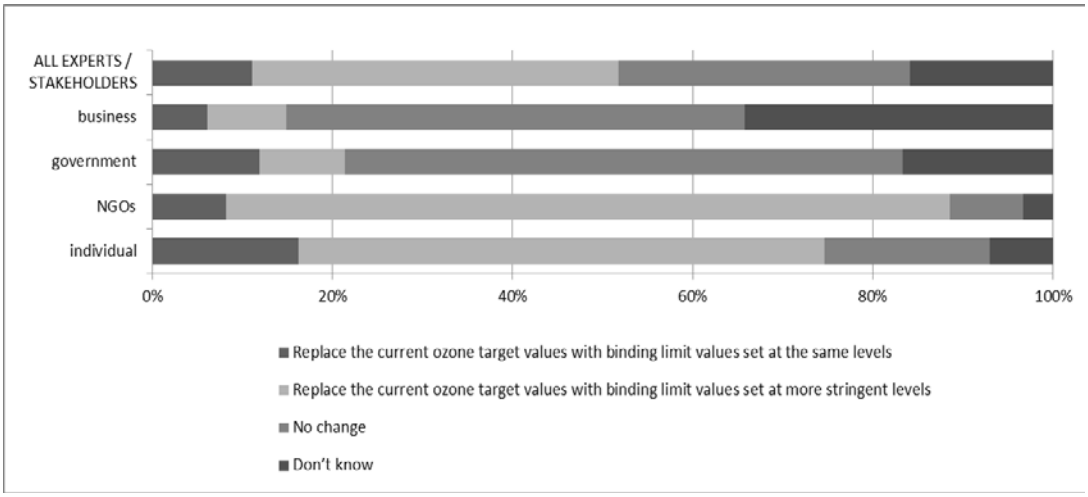
A number of comments also stated that legislation should address the chemical speciation of PM and not focus on particulate size. To regulate individual components, many respondents from governments, NGOs and individual experts also stated that limits should be set on the number of particles rather than on the mass.

4.3 Aligning with latest scientific and technical knowledge (ozone)

This section contained a single, closed question, asked only of experts and stakeholders.

Question 17: Which binding limit values (if any) should the AAQD set for ozone?

This question was asked on the expert/stakeholder questionnaire. Respondents were asked to choose one response.



For the responses as a whole, the highest share (40.7%) indicated that current non-binding limit values for ozone should be replaced with binding limit values at more stringent levels. Among the sub-groups, a majority of NGO and expert responses supported this position. A majority of business responses (50.9%) and government responses (61.9%), however, chose '*no change*'.

4.4 Management framework

This sub-section contained three open questions, asked only on the questionnaire for experts and stakeholders, along with two closed, multiple-choice questions, asked on both questionnaires.

Question 18: Should any limit values be removed from the AAQD? If so, which?

Respondents to the questionnaire for experts and stakeholders could provide comments for this question.

Several **business** responses called for the removal of the short-term limit of NO2; others suggest removing the daily PM_{10} limits values while keeping the yearly values; a few suggested removing yearly PM_{10} limit values and CO and SO_2 limit values. However, about one-third of the written comments from business (across sectors including steel, air transport, cement and power) to this question stated that no limit values should be removed.

A number of **government** comments called for the simplification of the current system, reducing the number of limit values. A number of comments called for the removal of yearly PM_{10} limit values; most of these suggest replacing them with yearly $PM_{2.5}$ limits. However, several comments – in particular from German government bodies – stated that daily PM_{10} limit values should be retained.

A few government responses called for the deletion of other limit values, including the following: removing NO2 short term limits, removing daily PM_{10} limit values while maintaining yearly limits, and removing CO limits.

Regarding PM2.5, Eurocities wrote that *'current absolute pollution exposure concentration obligation for PM2.5 should be replaced by a percentage reduction goal'* as there is no specific concentration threshold at which particulate matters become less dangerous for human health.

Very few **NGO** comments called for removing limit values. Those proposed include hourly NO2; SO2; and PM10 to be replaced by PM2.5.

Few **individual experts** commented; those doing so suggested the removal of CO limit values.

Question 19: Should any other monitoring and reporting obligations be reduced in the AAQD? If so, which?

About one quarter of the **business** comments stated that no other monitoring and reporting obligations should be reduced. Moreover, at least as many underlined that monitoring and reporting should refer to representative measuring points, defined by the level of population exposure; exposure should then determine the number of monitoring stations.

Moreover, Europia (the European oil and gas association) called for *new* monitoring sites, including '*monitoring at rural sites outside population centres*' and in populations that are less at risk, because:

> *'for reliable results one must perform studies comparing an exposed population to a matched group of unexposed individuals whose exposure level can be documented, particularly for accountability studies, e.g. on the effectiveness of low emission zones as a control option'.*

A few comments called for flexibility in monitoring requirements, such as removing certain pollutants from monitoring or reporting where justified (e.g. ongoing compliance). One business comment proposed '*simplifying and partly automating the annual air quality reports in the context of e-Reporting Decision (2011/850) implementation*'.

One third of **government** comments stated that no other monitoring and reporting obligations should be reduced.

On the other hand, several government respondents proposed the reduction of monitoring costs by increasing requirements for modelling, which should allow the reduction of monitoring stations.

A few government respondents also called for the simplification of reporting procedures, e.g. the simplification of forms and further harmonization between international reporting and EU reporting obligations. Two respondents stated that monitoring requirements should be kept to a satisfactory minimum, to simplify procedures and to secure resources for concrete measures to achieve compliance.

Other respondents called for the reduction of requirements for specific pollutants, mainly SO2 and NO2 and CO. DEFRA suggests a reduction in requirements for '*ozone precursor substances and deposition of PAHs and metals*'. Several comments from Germany suggested that '*the upper assessment threshold for PM10 in annex II should be raised*'.

While not suggesting a reduction in requirements, a few respondents called for the standardisation of siting criteria for monitoring stations to strengthen comparability among measurements from different Member States and regions. Several German comments proposed as a criterion that the siting of monitoring stations should be based on population exposure.

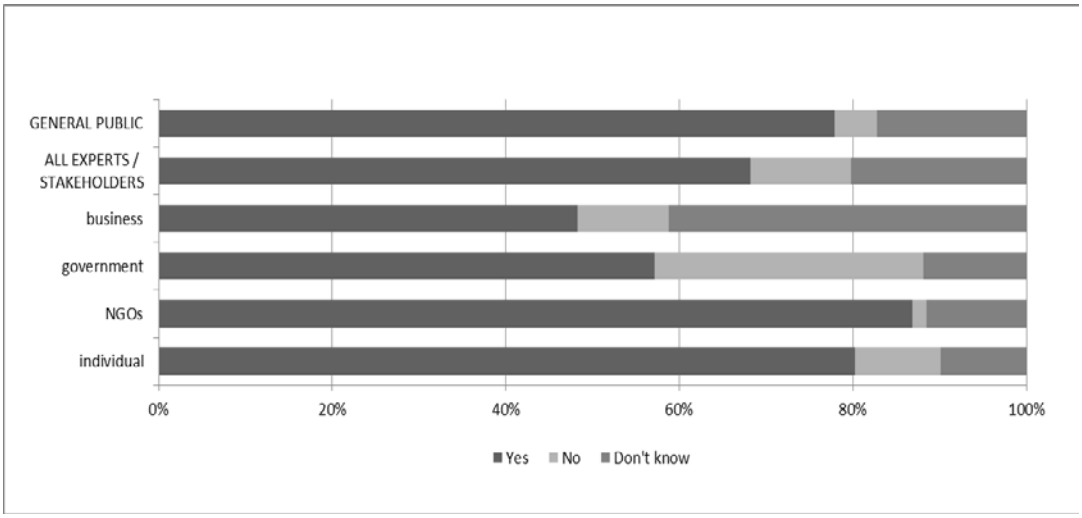
One comment from the Netherlands called for harmonising monitoring processes, notably PM-alert levels across Member States, to foster public awareness of the issue, and focusing reporting on the annual PM10 limit value, as adverse health effects are mostly related to long term exposure.

The large majority of **NGO** and **individual expert** responses indicated that no monitoring and reporting obligations should be reduced. One NGO comment stated that '*the siting criteria were already somewhat relaxed in 2008 and further relaxation would reduce public health protection*'. Several respondents criticised the use of '*dubious calculation models*' for PM10 and NO2.

Several NGO respondents questioned the fact that '*the current system leaves Member States with a great deal of discretion in how they monitor air quality*': several comments proposed a standardization in monitoring methodologies to ensure a level playing field among Member States, focusing on residential areas, developing methods to make the link between exceedences and population exposed, and the development of modelling tools.

Question 20: Should zone-specific plans be consolidated into coordinated national plans?

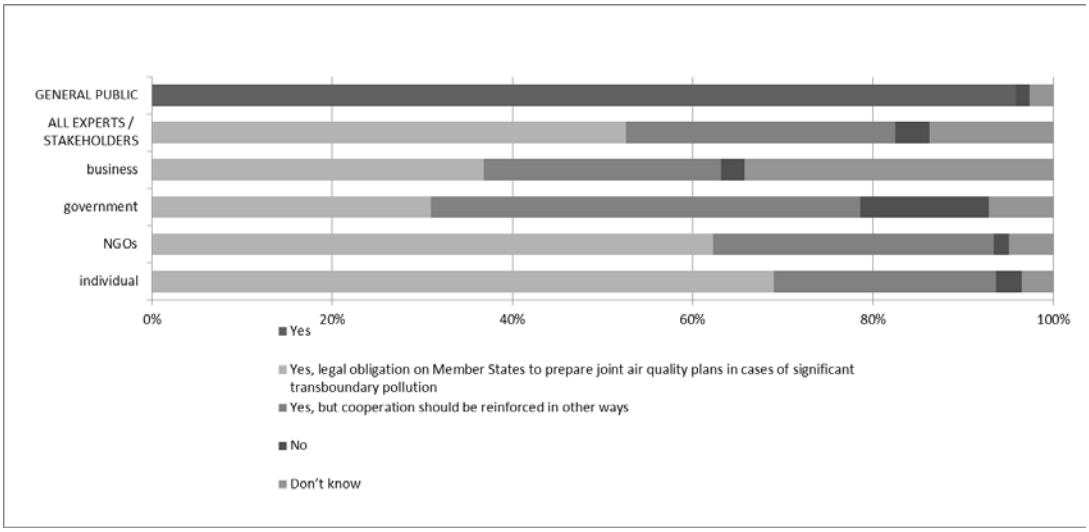
This question was asked on both questionnaires. Respondents were asked to choose **one** response.



Almost 80% of general public responses and almost 70% of expert/stakeholder responses called for the consolidation of zone-specific plans with coordinated national plans. Among the categories of respondents to the expert/stakeholder questionnaire, this position was supported by a majority of government, NGO and individual expert responses, as well as 48.3% of business responses; however, 41.2% of business responses indicated '*Don't know*'.

Question 21: Should cooperation among Member States be reinforced to better address transboundary pollution flows that affect local air quality problems?

This question was asked on both questionnaires. Respondents were asked to choose **one** response.



Almost 96% of general public responses and 52.6% of expert/stakeholder responses indicated that '*Member States concerned should be legally obliged to prepare joint air quality plans in cases of significant transboundary pollution*'. This option was supported by a majority of NGO and individual expert responses, and 36.8% of business responses. While 31.0% of government responses chose this option, 47.6% instead indicated that cooperation '*should be reinforced, but in other ways'*.

Question 22: Comments on the options for the revision of the AAQ Directive

Respondents to the questionnaire for experts and stakeholders could provide comments for this question.

Although the question covered all options for the revision of the AAQD, many respondents from businesses and governments commented mainly on the two previous questions on zone-specific plans and transboundary pollution.

Among **business** comments regarding transboundary pollution, respondents from the automotive industry and the steel industry called for a mandatory cooperation system, while respondents from the air transport sector instead suggested strengthening cooperation between Member States in case of significant transboundary pollution, leaving them the choice of the modalities of cooperation. Several other respondents referred to softer cooperation forms, such as joint discussion to ensure actions plans are complementary or exchange of best practices. Comments from the cement industry underlined the role of the Commission to set up cooperation agreements and see it as a referee for non-binding cooperation. Another comment (from the Confederation of Danish Industries) stated that countries should collaborate on datasets covering the transboundary zones, to show these specific zones in statistics.

A few business comments called for maintaining the current framework until existing ceilings are met, and taking into account the current economic crisis before setting requirements.

Among **government** comments, a few supported mandatory cooperation schemes. The Dutch Ministry of Environment proposed a system where a '...*Member State should be legally obliged to prepare joint air quality plans on request*' of a neighbouring Member State. The Swedish Environmental Protection Agency called for addressing transboundary pollution at EU level rather than via Member State negotiations, and proposed the development of coherent EU strategies to deal with the most problematic transboundary pollutants like ozone.

The Scottish Environmental Protection Agency (UK) stated that a '*more fully integrated (cross-border) regional action planning process would bring transboundary pollution to the fore and should allow MS to cooperate, develop measures and achieve wider compliance, while also minimising costs, effort and regulatory burden*'. Several respondents underlined the role of the Commission in enabling cooperation between Member States and regions, and one respondent suggested an Interreg-type form of cooperation between regions on air pollution.

Several government comments, however, called for addressing transboundary air pollution via emissions ceilings rather than the AAQD. For example, several German responses called for stricter NECD ceilings and the consultation of countries on national plans as the best way to reduce transboundary pollution.

Regarding zone-specific plans, DEFRA underlined that '*it is for Member States to determine air quality governance arrangements in their countries according to their needs*'. Several German comments stated that there is no need for consolidating regional plans, and considered that a national plan should only complement regional plans proposing abatement measures at national level. The Swedish Environmental Protection Agency, however, was in favour of the consolidation of regional plans into national plans and stated that more effective guidance and support from EU level for planning would be welcomed.

NGOs and **individual experts** focused on three main points: the harmonisation of EU standards with WHO recommendations, the acceleration of enforcement procedures, and the adoption of new ceilings under NECD combined with stronger source control legislation.

A research organisation, the Leibniz Institute for Tropospheric Research, warned against the consolidation of zone-specific plans within coordinated national plans, because '*background measurements are necessary to estimate the local influence*'

4.5 Questionnaire for the general public: written comments on the AAQD and on ambient air pollution issues

Although the questionnaire for the general public did not include an open question focusing on ambient air pollution issues, many comments to the single, open question on further comments referred either to specific ambient air pollutants or to issues related to local air pollution levels. An overview of these comments is presented in this section.

Comments on pollutants

While many comments referred to problems concerning specific pollutants, few referred specifically to the AAQD. The following table provides an overview of all responses regarding specific pollutants:

General	35
VOC	4
PM / soot / particulates in general	65
fine pm (pm2.5)	72
ultra fine pm	6
NOx	16
black carbon	26
other	16

Among those respondents that referred to specific pollutants, particles in general and fine particles (PM2.5) are the pollutants most frequently mentioned. Black carbon was mentioned 26 times, mainly by Belgian respondents. NOx was largely mentioned by French respondents recommending a tax on NOx to reduce pollution coming from air transport. Many other respondents referred to specific sources, such as road traffic, including air pollution arising from diesel-powered vehicles. A few respondents in Eastern Europe referred to high levels of particulates. For example:

> *'In Krakow, we are struggling with high PM_{10} levels especially in winter. Most PM_{10} comes from the domestic use of heaters. Most of them are burning coal. In order to save money, some people tend to burn plastic bottles, collected through summer.'*

Comments on local actions

A number of respondents also referred to local actions to address air pollution. The following actions were identified, along with the number of responses for each:

Monitoring / measuring	40
Local traffic measures	82
Local institutional performance	99
Local health concerns related to air	123

Health cames as the first preoccupation; the 123 answers include comments about general preoccupations regarding health related to air pollutants, notably concerning children; some responses cited specific respiratory diseases. Belgian respondents accounted for 60% of these comments.

The responses classified as 'local institutional performance' includes remarks on the lack of commitment and capacity of local authorities to reduce air pollution. These comments essentially came from Belgian (39) and Italian (33) respondents. An example of an Italian comment was the following:

> *'In Italy and especially Lombardy the failure of the national Government to draft a national plan has been used to justify unsuccessful policies that were solely - or mostly - attributable simply to the failure by the local governments to act properly with local measures.'*

Comments classified as 'local traffic measures' referred to measures aimed at limiting car traffic in city centres and promoting alternative modes of transport (public transports, bike lines). Belgian respondents account for 80% of these comments.

A comment from Denmark stated that:

> *'Cities all over the EU should be allowed, and required if their local level of pollutants are too high, to introduce zones in their cities of net-zero emissions vehicles only.'*

And a comment from Italy focused on public transport:

> *'Public transport needs more attention. It is constantly subject to cuts from local governments whereas it should be implemented to provide a viable alternative to cars.'*

Finally, comments classified as ‘monitoring’ included those calling for better actions at local level to inform citizens. Some comments referred to a potential bias in current monitoring data, which they attributed to political decisions or a lack of monitoring infrastructures.

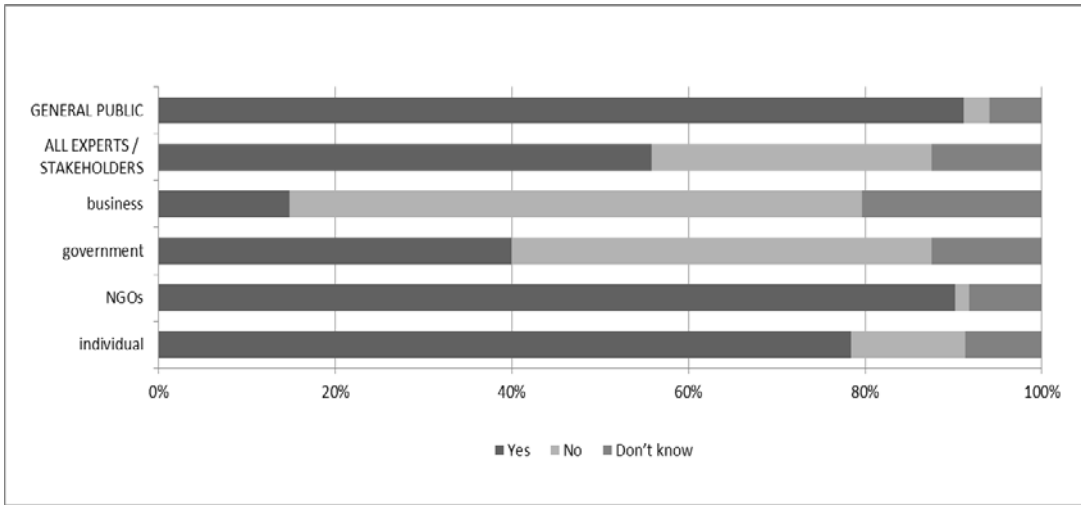
5 Revising the National Emission Ceilings Directive (NECD)

5.1 Aligning with the latest scientific and technical knowledge

This section had one closed, multiple-choice question, which was found on both questionnaires. In addition, the questionnaire for experts and stakeholders contained an open question.

Question 23: Should national emission ceilings be adopted for black carbon/elemental carbon?

Respondents were asked to choose **one** response.



In the general public questionnaire, 91.2% of respondents indicated that national emission ceilings should be adopted for black carbon/elemental carbon; 55.8% of the expert/stakeholder respondents supported this option. Within the expert/stakeholder responses, over 60% of NGO and individual expert responses agreed with the option; in contrast, 61.4% of business and 45.2% of government responses were opposed.

Question 24: Should national emissions ceilings be introduced for other new pollutants?

Respondents to the questionnaire for experts and stakeholders could provide written comments in response to this question.

Only a small share of **business** respondents proposed other pollutants. Among these, one respondent from the waste management industry stated that '*defining ceilings for methane could be an incentive to use reduction potentials for methane emissions from landfills in the EU*'. Other business respondents suggested that mercury and heavy metals could eventually be included in the NEC Directive (an energy sector enterprise); ultra-fine particles (an airport respondent); and the inclusion of '*pollutants which affect respiratory allergies and are not addressed in the NECD*' (a medical sector enterprise).

Other business respondents to this question instead argued against the inclusion of new pollutants. For example, respondents from the energy sector wrote that the Gothenburg Protocol's emission reductions for 2020 will entail significant costs and the inclusion of further ceilings would not have a clear benefit and would undermine investment. One respondent in the agriculture sector stated that the inclusion of methane would '*overcomplicate the existing policy framework, create negative trade-offs (…) and would neglect the Commission's objective of Better Regulation*'.

Several **government** respondents in Germany, Sweden and Scotland called for national ceilings on methane emissions, due to this pollutant's damage to health and vegetation.

Several comments from government representatives argued against inclusion of black carbon: some stated that better inventories are needed; another point made was that ceilings without source-specific actions would '*not solve the problem*'. Some comments, including by authorities in Germany and Italy, called for ceilings on total carbon emissions rather than black carbon; some referred to the CEN standard under development for total carbon. One comment proposed a ceiling on black or elemental carbon to complement an air quality standard on the pollutant.

Other comments proposed hydrogen sulfide and ammonia for ceilings under the NEC Directive.

Almost all **NGO** comments to the question called for a ceiling on methane, arguing that it would deliver '*deliver significant benefits for human health, biodiversity and crops through reduced emissions of ozone precursors, with important co-benefits for climate change mitigation*'. These comments also called for the investigation of a ceiling on mercury.

Other comments called for ceilings on ultra-fine particles, pesticides and Benzo[a]pyrene.

Several **individual experts** requested ceilings for methane and mercury emissions. Furthermore, a few experts suggested including other pollutants in a revised NECD. The pollutants proposed included: dioxin and formaldehyde; $PM_{2.5}$, sulphur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), carbon monoxide (CO), polycyclic aromatic hydrocarbons (PAHs), lead (Pb), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), methane (CH_4); btx and PM_1; POPs, furan and pesticides.

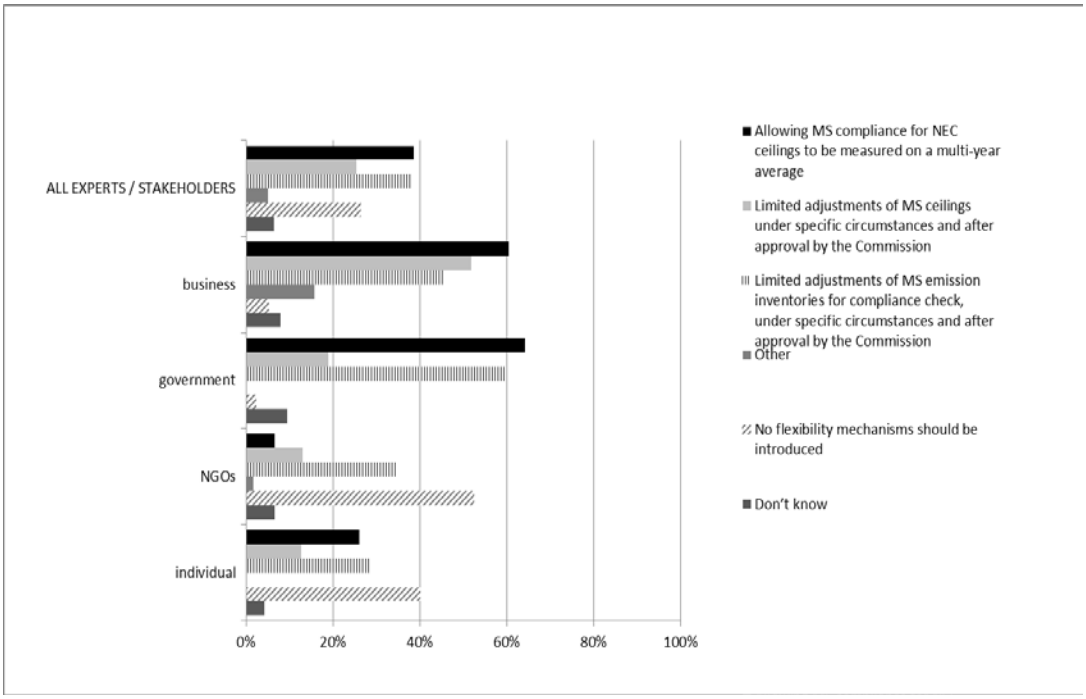
One expert, however, wrote that it is '*not useful to expand ceilings for individual PM components, but an approach similar to that used for NMVOCs (speciation) could provide an efficient option*'.

5.2 Management framework

This sub-section contained two closed, multiple-choice questions, asked on both questionnaires. The questionnaire for experts and stakeholders also contained an open question.

Question 25: Which mechanisms for flexibility should be introduced into the NEC Directive management framework?

This question was asked only on the expert/stakeholder questionnaire. Respondents were asked to choose **one or more** responses.



Across all expert/stakeholder responses, two options received about 38% each:

> *Allowing Member State compliance for the Directive's ceilings to be measured on the basis of a multi-year average*
>
> *Allowing limited adjustments of Member State emission inventories for compliance check, under specific circumstances and after approval by the Commission*

A majority of business and government responses supported these options.

Just over 26% of all expert/stakeholder responses indicated that no flexibility mechanisms should be introduced. This option was supported especially by NGOs (52.5% of responses) and individual experts (40.1% of that group); support among business and government, however, was under 6%.

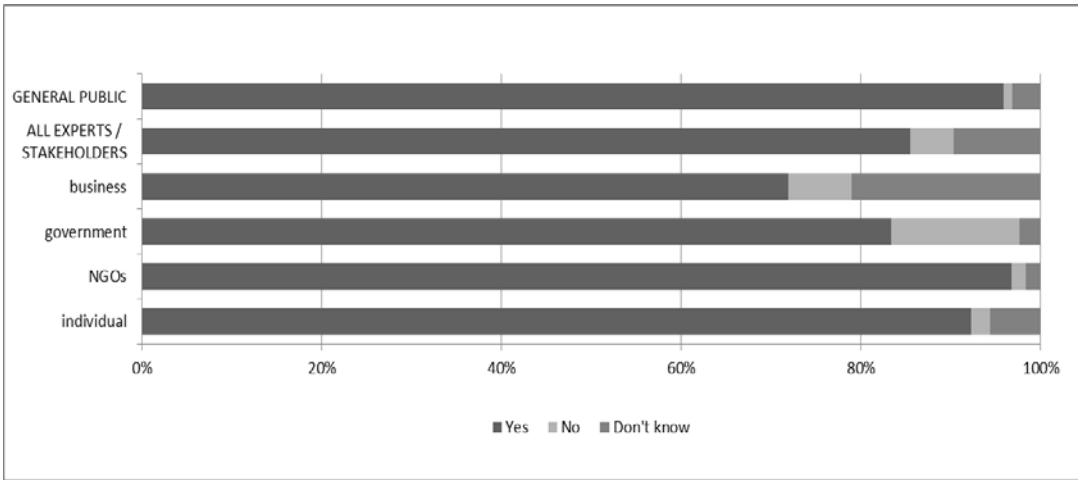
A fourth option received just over 25%:

> *Allowing limited adjustments of Member State emission ceilings, under specific circumstances and after approval by the Commission*

This option was chosen by just over one-half of the business responses, but less than 20% of the responses from the other groups.

Question 26: Should coordination be required between the national and local levels in respect of emissions reduction measures and local air quality management?

Respondents were asked to choose **one** response.



Strong majorities – 95.9% of the responses to the general public questionnaire and 85.4% of those to the expert/stakeholders questionnaire – indicated that coordination should be required regarding emissions reduction measures and local air quality management. A strong majority of each of the expert/stakeholder sub-groups (over 70%) were in favour of coordination.

Question 27: Please feel free to provide comments on the options for the revision of the NEC Directive

One set of **business** comments, presented by respondents from the steel industry as well as the Association of the Dutch Metallurgic Industry, the Federation of Finnish Technologies, the French Association of Large Companies and the Confederation of Employers and Industries of Spain underlined the role of flexibility measures. These comments stated that '*flexibility measures introduced in the recently approved Gothenburg Protocol should be transposed within EU AQ legislation, especially important when including a new pollutant ($PM_{2.5}$) into the NECD*'.

Comments from energy sector respondents in Germany, Sweden and the UK, however, noted potential risks arising from flexibility and underlined that the sector needs to have a stability in the emissions limits derived from emission ceilings.

In addition, several comments, including from the automotive industry, called for better coordination between the national and the local levels. Some respondents argued that improved efficiency and cost-effectiveness will result with a more centralized system that oversees efforts at the local and regional level.

A few respondents also stated there should be a Member State pooling in order to balance national ceilings between them.

A comment from an energy company in Spain called for national sub-ceilings on a sector-by-sector basis, to be quantified by each Member State.

Many **government** respondents stated that the revision of the NECD should match with the revision of the Air Quality Directive. For example, several comments from the Netherlands stated that:

> "*The ambitions for the revision of the NEC Directive should be in line with the ambitions for the Air Quality Directive. The NEC Directive is the best instrument to*

lower the background concentrations. Also, this makes local and regional air quality policies feasible. An ambitious NEC directive needs to be anticipated by EU source measures'.

A few respondents stated that the allocation of responsibilities between national and local levels should be done by the national authorities. For example, a UK comment referred to substantial practical barriers and subsidiarity conflicts in prescribing how plans should be coordinated within a Member State.

Two comments called for further alignment between the NEC Directive and the CLTRAP: one on reporting deadlines; the other that the same inventory adjustment procedures should be used.

Few **NGO** respondents commented on this question. A UK NGO from the UK proposed that the NEC revision should focus on improved enforceability, as well as Aarhus Convention requirements, and moreover suggested that the directive instead become an EU regulation. Furthermore, this response called for an enhanced role for the EEA in overseeing implementation.

Two NGOs stated that special consideration should be given to protect vulnerable or sensible population, an issue highlighted recently by WHO.

The comments by **individual experts** covered many issues indicated by stakeholders. One further comment, proposed by two respondents, is that regional differences in federal countries need to be taken into account when considering coordination.

Questionnaire for the general public: written comments on the NEC Directive

Over 150 comments to the open question on the questionnaire for the general public mentioned the NEC Directive. The following topics were addressed:

General	155
Black/ elemental carbon	8
Particulate matter	4
Coordination between local and national levels	6

A large number of respondents referred generally to the NEC directive, without specifying which particular ceilings should be lowered. This high number included 130 Dutch respondents, many of whom called for a '*much higher ambition level than the EU commitments of the revised Gothenburg Protocol*'.

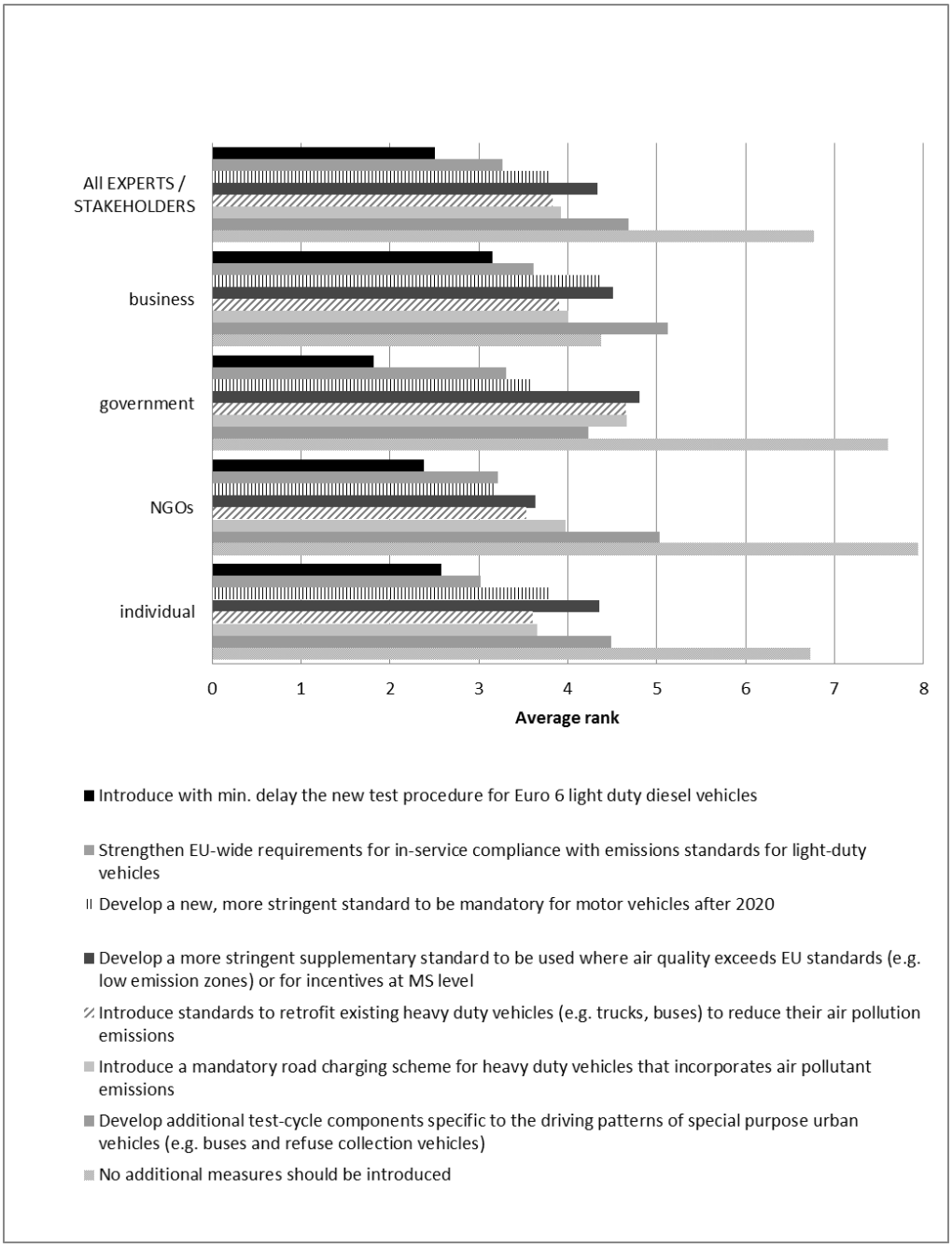
6 Addressing major air pollution sources

Questions in this topic area were only asked on the expert/stakeholder questionnaire.

6.1 Road transport

Question 28: Which additional measures should be taken to address air emissions from road transport?

Respondents were asked to **rank as many of the options as they wished** in order of preference from 1 (most preferred) to 8 (least preferred).



Note: a *lower* score refers to a *higher* rank.

The average rank is displayed in the figure above for each of the options, where score 1 is the highest possible and 8 is the lowest possible score.

Across all respondents to the expert/stakeholder questionnaire, the highest rank (i.e. lowest score on average) was given to the option to '*Introduce with minimum delay the new test procedure to ensure that real world emissions of Euro 6 light duty diesel vehicles are as close as possible to the type approval limit values*'. This option was given the highest rank by each sub-group.

The second-ranking option overall was to '*Strengthen EU-wide requirements for in-service compliance with emissions standards, to ensure that light-duty vehicles on European roads continue to produce low emissions over their lifetime*'. This was the second-ranked option as an average for each sub-group except NGOs, which gave the second place to '*Develop a new, more stringent standard to be mandatory for motor vehicles after 2020*'.

It can be noted that '*No additional measures'* received the lowest average ranking, both overall and also for government, NGO and individual expert responses; for business responses, this option was tied as third-lowest in rank.

Question 29: Comments on your answers regarding regulation of road transport emissions.

Many **business** comments stated that the EU and Member States should promote the deployment of EURO VI/6 vehicles on the market instead of setting new standards at the present time.

Automotive enterprises and business associations (including respondents at EU level and from France, Germany and the UK) made this point and also called for the introduction of cleaner market fuels and a holistic approach for achieving both CO2 and air pollution reductions. These comments also stressed the contribution that manufacturers have made to the achievements to curb emissions of road vehicles. They wrote that:

> '*the increase in diesel cars is due to (a) the need to meet the stringent CO2 legislation and (b) due to the technological capability of EU industry. Diesel engines are now very clean with all the technology required to meet the latest standards*.'

Comments from respondents in the oil and gas sectors called for the promotion of cleaner fuels, including natural and biogas and paraffinic fuels. The Alliance for Synthetic Fuels commented that '*paraffinic fuels (including GTL and HVO, and described in the CEN TS 15940 standard) should be considered equivalent to EN 590 for the purpose of any emissions legislation*'.

A comment from the Tyre and Rubber Manufacturers called for national incentives to '*purchase tyres with a C grade or higher in both rolling resistance and wet grip (according to Reg 1222/2009) … [and] tyre pressure monitoring systems mandatory for commercial vehicles – through a revision of Reg 661/2009*'.

A comment from the Italian Electricity Association proposed the further electrification of transport (as well as heating and cooling) as an approach to improve urban air quality.

A few business comments called for improvements to emissions measurement. One stated that: '*most I/M inspections measure emissions under non-real conditions'*.

Responses from **governments** proposed a range of measures. Several called for improved emission tests for motor vehicles. One comment from a local government in the UK, for example, called for '*real tests for ultra urban driving conditions, hill starts and cold starts*'. Another comment stated that '*also for heavy duty vehicles a method for evaluation of off cycle emissions has to be developed and introduced in the Euro VI legislation*';

Further suggestions from government respondents on road transport emissions included the following:

- A fund to support early introduction of the Euro 6 standards;
- Research and standards for low-wear brakes and tyres, and including tyre wear in the EU labelling scheme;
- Promotion of public transport, cycling and walking;
- Road pricing, with revenues going to investments for greener forms of transport;
- Covering elemental or black carbon in new standards;
- Emission standards rather than motor standards for heavy-duty vehicles;
- Greater use of electrical vehicles, CNG and other alternative fuels.

The International Association of Public Transport (UITP) also suggested that:

- Public transport vehicles are exempted from driving bans in low emission zones
- Road pricing to establish a level playing field among transport modes
- Financial support for cleaner public transport vehicles so local authorities do not need to reduce services to compensate for the higher cost of such vehicles

A shared comment provided by several EU and national **NGOs** stated that existing standards are not stringent enough, tend not to deliver in real world driving, and in-use compliance checking is poor. These comments called for real world condition emission tests, a EURO 7/VII standard, improved emission testing and the promotion of public transport, cycling and walking.

A few comments called for an inter-DG approach is necessary; for example, one NGO respondent wrote that the "*reduction of road transport is linked to other EU and national sectoral policies, e.g. employment, housing, agriculture etc*".

Several NGO comments called for greater enforcement to check that filters on diesel vehicles are not damaged or removed. Some respondents stated that all of the actions listed in the closed question should be given priority due to the urgency of reducing emissions from the sector.

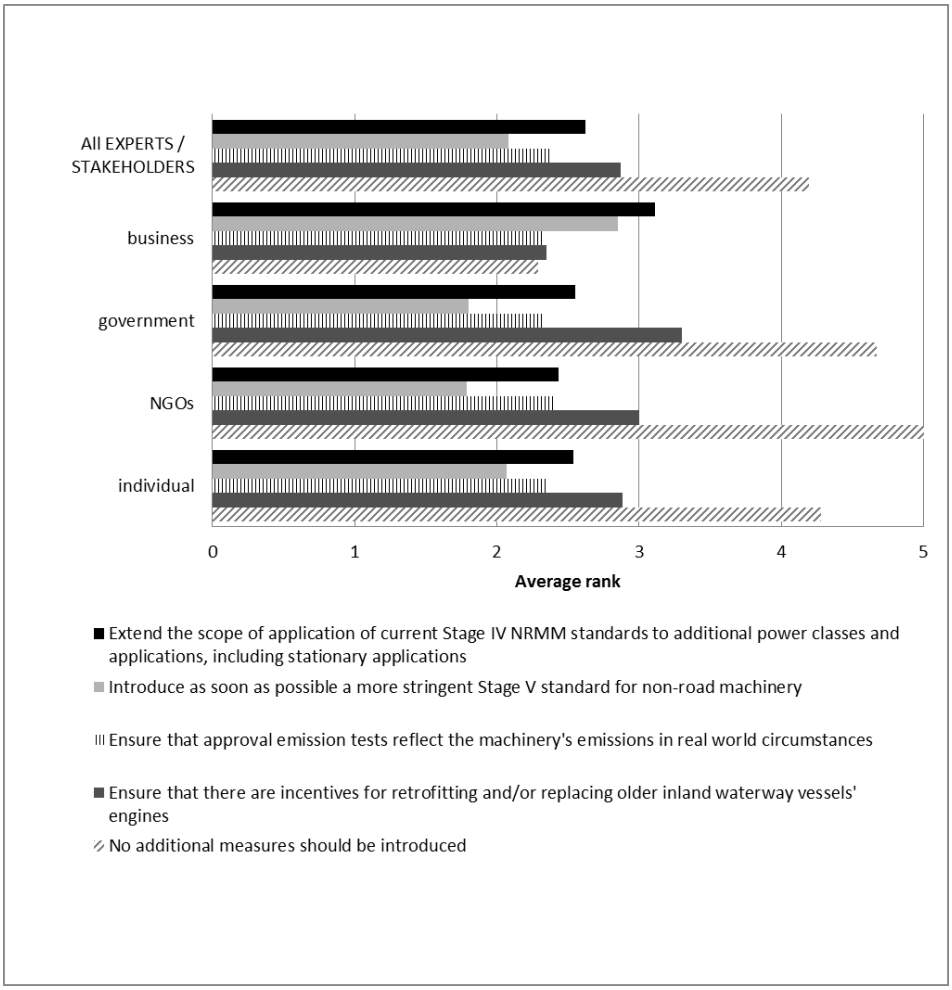
A few NGOs working on environment and health called for financial incentives to promote behavioural changes: '*The EU should set incentives for active transportation (more walking and cycling) at the regional and local level, as it is a win-win for reducing air pollution, CO2 and public health*'.

Several **individual experts** also provided the common comment by the EU and national NGOs. In addition, some expert comments called for electric /hybrid cars to be promoted for urban areas, and diesel vehicles to be forbidden. Others called for a shift from long-distance truck transport to other modes, such as rail.

6.2 Off-road transport and non-road machinery

Question 30: Which additional measures should be introduced for non-road machinery?

Respondents were asked to **rank as many of the options as they wished** in order of preference from 1 (most preferred) to 5 (least preferred). The average rank is displayed for each of the options, where score 1 is the highest possible and 5 is the lowest possible score.



Note: a *lower* score refers to a *higher* rank.

For the expert/stakeholder respondents overall, the option that received the highest average ranking (i.e. lowest score) was to '*Introduce as soon as possible a more stringent Stage V standard for non-road machinery, aligned with the limit values of the most stringent Euro VI regulation for heavy duty road vehicles, which would further reduce especially PM emissions*'. Government, NGO and individual expert respondents all gave this option the highest average ranking.

The second-highest ranking option – both for all expert/stakeholder respondents and also for each sub-group – was: '*Ensure that approval emission tests reflect the machinery's emissions in real world circumstances'.*

'*No additional measures'* received the highest average ranking from business respondents, but the lowest average ranking from the other categories.

Question 31: Comments regarding regulation of emissions from off-road transport and non-road machinery

This open question was asked only to stakeholders and experts.

Several **business** respondents – including the European Express Association as well as EU and German air transport associations and a German airline – stated that emission reduction at source should be pursued in the sectors where they are the most cost-effective to achieve. Furthermore, a few wrote that other measures, especially land-use planning, for example to minimize transport distances, should be considered in addition to source controls.

The Mineral Products Association from the UK and the European Cement Association both warned that '*the extension of the EU Thematic Strategy on Air Pollution and related policies to include off-road and non-road machinery could have potential implications*' on their respective industries in Europe, for example related to the costs of equipment replacement and testing regimes. Similarly, Copa-Cogeca (agriculture sector) did not support the introduction of additional requirements for non-road machinery, stating that there is not clear evidence for such measures.

One respondent from the automotive sector commented that incentives for engine replacement are more effective regarding emission reduction and OBD control measures than retrofitting existing engines.

The French railroad operator. SNCF, stated that '*some diesel stationary engines are used only for rescue and it would be counterproductive to deal with engines used for rescue or back-up purposes in the same way as engines having a standard usage all over the year*'. Also, this comment argued that if incentives for retrofitting are only given for inland waterway vessels' engines and not for the rail sector, this would be unfair in terms of intermodal competition. The European Association of Crafts and Small and Medium-Sized Enterprises (UEAPME) and the Austrian Federal Economic Chamber also called for incentives to support other types of non-road machinery in addition to waterway vessels.

The Community of European Railway and Infrastructure Companies stated that '*Total emissions from rail diesel traction have continuously decreased since 1990 and are extremely low today as a percentage of the transport sector as a whole*', and highlighted expected nemission reductions for the sector. The comment indicated that a revision of the NRMM Directive could '*create the necessary regulatory framework which allows the rail sector to improve whilst remaining competitive*'.

Regarding the revision of the NRMM Directive, in separate comments, three EU machinery manufacturing associations (CEMA, European Agricultural Machinery; CECE, Committee for the European Construction Equipment Industry; and Euromot, internal combustion engine manufacturers) called for a cost/benefit analysis for the introduction of Stage V. CEMA also wrote that the scope of stage IV should be extended for engines below and above the current limit, and that an adaptation period of 5 years is needed before the introduction of Stage V to let the industry develop appropriate technologies. The machinery manufacturers also supported the alignment of NRMM limits with the limits set by authorities of important third markets, especially USA EPA.

The Association for Emissions Control by Catalyst (AECC) called on future Stage V legislation to incorporate the following: application to all NRMM engines and machinery categories; a single PM limit for all NRMM engines above 19 kW; covering all NRMM engines, including the smaller (<37

kW) and the larger ones (>560 kW) with fewer engine power bands and a harmonization in their emissions requirements.

One enterprise in the automotive industry supported the alignment with EURO VI standards given the similarity between non and off road vehicles and heavy duty vehicles engines.

Several respondents noted that the European Commission is addressing additional measures for off-road transport and non-road machinery through a separate consultation on Directive 97/68/EC and that they have already taken a position in that forum.

Among **government** comments, four Federal Länder in Germany stated that "*we should follow the Swiss example requiring particle filters for off-road machinery*", and also called for an EU funding scheme for retrofitting.

A separate comment from the German Federal Environmental Agency noted out that small stationary engines are already included in the Ecodesign Directive and suggested that medium stationary engines be regulated under the IED.

The Swedish Environmental Protection Agency called for more stringent measures in several areas, including the following: better reflecting real-world emissions in legislation; bringing all categories to Stage IV and extending the scope of legislation; bringing emissions limits for medium-sized equipment to match those for smaller equipment; and improving emission inventories.

A response from the UK national government, however, stated that more detailed evidence and analysis (incl. cost-benefit analysis) is needed to prioritise further measures.

Over half of the **NGO** responses expressed a common comment which addresses the following issues:

- Recent evidence shows the impact of diesel emissions on health;
- The Commission should propose a stringent particulate number (PN) limit that will guarantee the rapid introduction of the best available technology (closed particulate filters) to address all fractions of PM emissions (including ultra-fine particles and black carbon);
- The Commission should align the next NRMM stages with the most recent standards for heavy-duty vehicles (Euro VI).

Some of these comments also called for compulsory green public procurement rules to support low-emitting NRMM.

Two NGO responses stated that there should be specific legislation for zones in which limit values are exceeded.

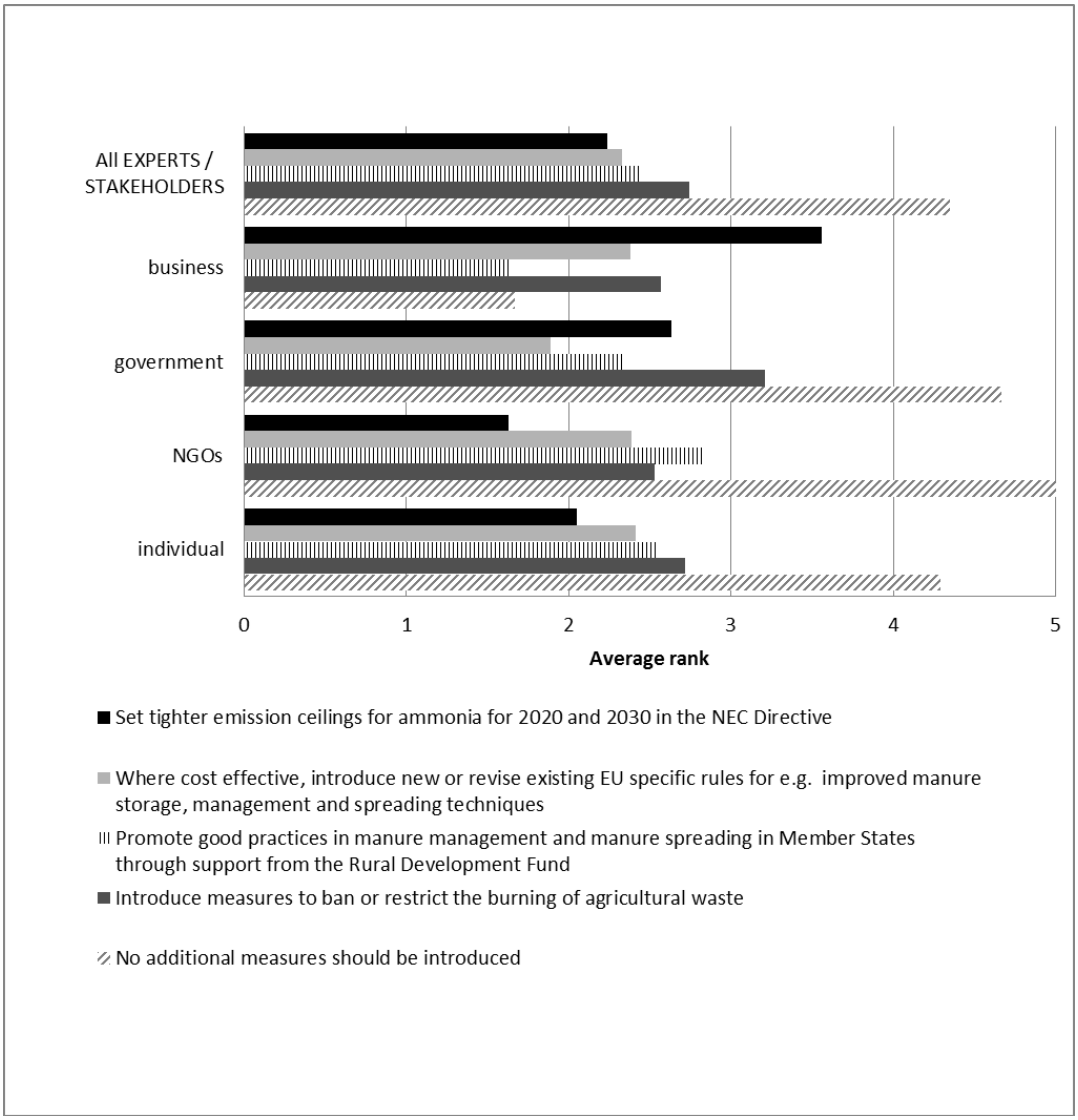
Among the **individual experts**, one response stated that ceilings should be applied in polluted areas only.

Across the different groups, quite a few respondents criticized the ranking system used in question 30 in particular and wrote that they would have given priority to several answers.

6.3 Agricultural sector

Question 32: Which additional measures should be taken to address air emissions from the agricultural sector?

Respondents were asked to **rank as many of the options as they wished** in order of preference from 1 (most preferred) to 5 (least preferred). The average rank is displayed for each of the options, where score 1 is the highest possible and 5 is the lowest possible score.



Note: a *lower* score refers to a *higher* rank.

The highest average ranking option (i.e. lowest score) for the expert/stakeholder respondents overall was: '*Set tighter emission ceilings for ammonia for 2020 and 2030 in the NEC Directive, leaving flexibility to Member States on how these ceilings can best be reached*'. This option received the highest ranking from NGO and individual expert responses.

The second highest average ranking went to the option for: '*Where cost effective, introduce new or revise existing EU legislation to establish EU-wide specific rules for e.g. improved manure storage, management and spreading techniques*'. This option received the highest average ranking in government responses.

Business responses gave the highest average ranking to: '*Promote good practices in manure management and manure spreading in Member States through support from the Rural Development Fund*'. This option received the third highest average ranking overall.

The second-highest ranking option among business responses was for '*No additional measures'*. This option, however, received the lowest ranking for expert/stakeholder respondents overall, and also for government, NGO and individual expert responses.

Question 33: Please feel free to comment on your answers regarding regulation of emissions from the agricultural sector

Respondents to the questionnaire for experts and stakeholders could provide written comments to this question.

Within the **business** responses, comments from the agriculture sector (Copa-Cogeca and a national association) noted that efforts to address ammonia emissions have already been carried out, though further reductions can come from better management of manure and feed. They wrote that further regulation should be evidence-based and achievable, and that action could be encouraged through Rural Development policy, adding that:

> '*We would not accept new or additional emission reductions, such as methane, which would be beyond cost-effective … for the sector. We would not support the introduction of new actions to reduce SLCP/black carbon emissions, without clear evidence for the need for additional measures.'*

Copa-Cogeca furthermore questioned the option for a EU-wide ban on burning of agricultural waste, stating that this is already proscribed in most Member States.

Comments from other sectors – including power and heating, cement and multi-sector business associations – wrote that all sectors should contribute equally to emissions reduction. The following statement is presented as an example:

> *'We do not accept a disproportionate burden for the industrial and commercial sector, only because of failures in the agricultural sector'*

Regarding specific pollutants, Europia, the European oil and gas association, wrote that '*reductions in NH_3 emissions from agriculture are essential in achieving progress in reducing eutrophication in the EU*', and moreover that the sector could also '*significantly reduce secondary $PM_{2.5}$*'. This organisation called for '*a stronger legislative framework to bring about the necessary reductions*'.

Among **government** responses, comments in particular from Germany stated that EU funding for agriculture should be aligned with good practices for manure management.

Several respondents called for tighter emission ceilings on ammonia emissions. The Swedish Environmental Protection Agency, for example, proposed that '*in combination with emission ceilings on ammonia, PM and methane, a technical annex with source specific ELVs and measures may be needed for this sector*'.

The Belgian government (in a coordinated answer from national and regional governments) warned of '*the possible antagonist effect of many measures regarding NH_3 or N_2O emissions, e.g. an action to reduce the emission of one gas that induces an increase in the emission of another*'.

The common responses from EU and national **NGOs**, plus about a third of individual expert responses, considered agriculture one of the most urgent fields where air pollution abatement measures are needed. Major issues of concern are ammonia, NH3 and methane emissions coming from agricultural activities. These responses asked for ambitious NEC ceilings for ammonia, PM and methane, combined with specific control measure such as banning waste burning or promoting best available techniques.

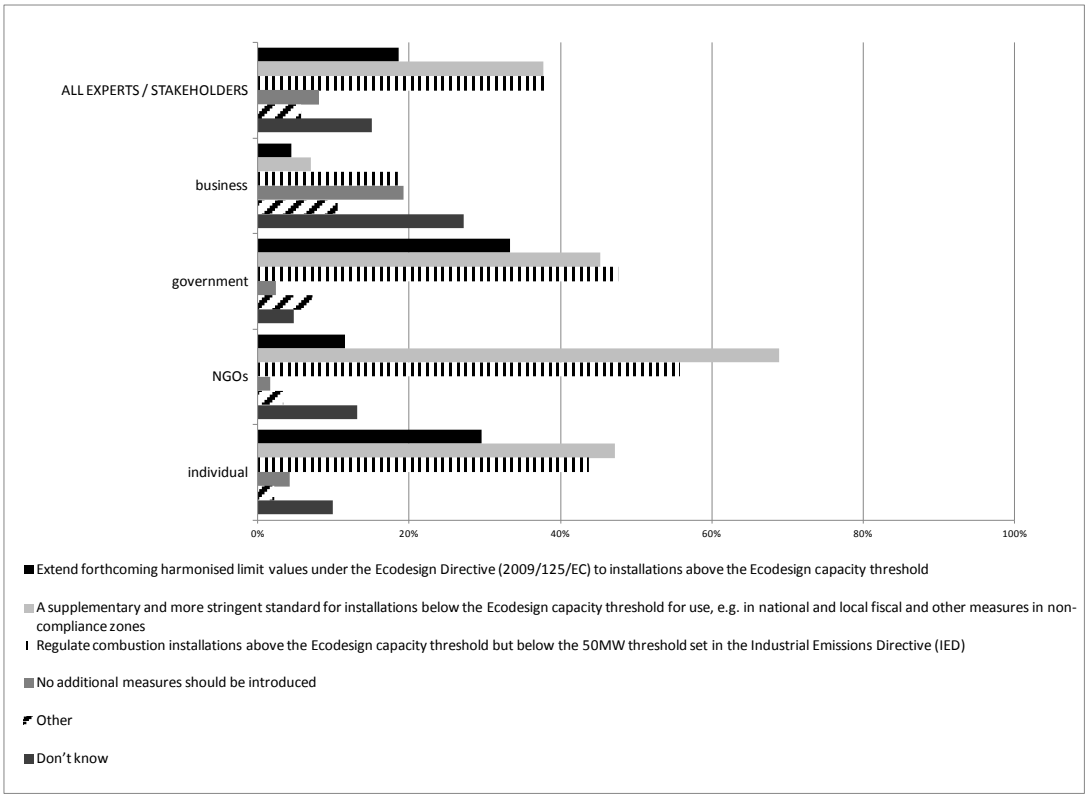
In addition, several NGO comments from France referred to the CAP as a necessary tool to cut emissions, by strengthening environmental requirements for the attribution of funding, or promoting measures to reduce the use of nitrogenous fertilisers.

Individual experts called for a less intensive agriculture, using less pesticides and fertilisers, and for broader support to biological agriculture. Several respondents also favoured a ban on agricultural waste burning. Others mentioned the pollution produced by livestock breeding and called for reduction in scale and cuts in subsidies for livestock.

6.4 Small/medium combustion sector

Question 34: Which additional measures should be taken to address air emissions from small and medium combustion installations (below 50 MW)?

Respondents were asked to choose **one or more** responses.



Two options for this topic were chosen by about 38% of expert/stakeholder responses. These options are:

> *Develop a supplementary and more stringent standard for installations below the Ecodesign capacity threshold for use in national and local measures such as fiscal incentives to be applied in zones that are in non-compliance with air quality limits.*

> *Regulate combustion installations above the Ecodesign capacity threshold but below the 50MW threshold set in the Industrial Emissions Directive (IED).*

Among government, NGO and individual expert responses, these two options received the highest shares of responses, and received more or less similar scores.

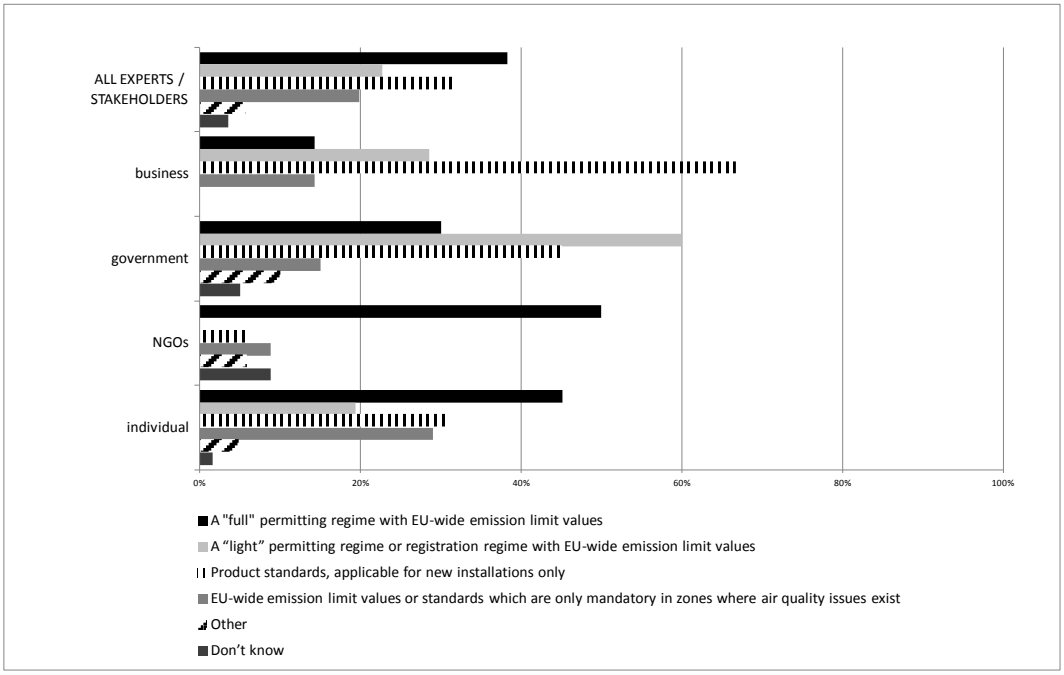
About 33% of government responses and 29% of individual expert responses indicated a third option:

> *Extend in future the forthcoming harmonised limit values under the Ecodesign Directive (2009/125/EC) to control emissions from installations above the Ecodesign capacity threshold*

For business responses, however, the highest share of responses went to '*Don't know*' (27.2%), followed by '*No additional measures'* (19.3%).

Question 34a: Which measures should be introduced to control emissions from combustion installations above the Ecodesign threshold but below 50 MW?

This question was only asked to respondents who chose the option '*Regulate combustion installations above the Ecodesign capacity threshold but below the 50MW threshold set in the Industrial Emissions Directive (IED)*' in Question 34. In total, there were 141 responses.



Note: based on 141 total responses on the questionnaire for experts and stakeholders.

Respondents were asked to choose **one or more** responses. The question was optional, and not all those invited to respond did so.

For the expert/stakeholder responses overall, the options receiving the highest share of choices were: '*A "full" permitting regime with EU-wide emission limit values*' (38.3%) and '*Product standards, applicable for new installations only*' (31.9%).

The sub-groups, however, chose rather different options.

Two-thirds of business responses chose '*Product standards*', followed by '*a "light" permitting regime or registration regime*' (28.6%).

Among government responses, 60% chose '*a "light" regime', and 45% indicated product standards.*

One-half of NGO responses and 45% of individual expert responses chose '*a "full" permitting regime'*.

Question 35: Please feel free to comment on your answers regarding regulation of emissions from the small/medium combustion sector

Respondents to the questionnaire for experts and stakeholders could provide written comments to this question.

Among **business** comments, Eurofuel highlighted the role of energy efficiency in reducing emissions and improving combustion performance.

Comments by Eurelectric stated that the inclusion of medium size combustion installations (between eco-design thresholds and 50 MW) in '*a full IED regime... would lead to an unmanageable administrative burden for small plants, both for competent authorities and operators*'. These comments furthermore stated that consideration of a light permitting regime for 20-50MW installations would need to show that new requirements are '*cost effective, proportionate and environmentally justifiable*'.

Several respondents from the steel industry, automotive industry and rail transport referred to the administrative burdens and the costs of adapting to new legislation and stated that no further legislation should be adopted; a few suggested instead product standards for new installations.

Respondents in **government** are expressed differing opinions on thresholds that should be adopted.

Several comments called for a full IED regime for medium size installations (10 or 20 MW to 50MW) but not for smaller installations, where these respondents advised a light regime. Comments noted that this type of scheme exists already in the UK.

DEFRA in the UK noted that for smaller installations '*presently there is no agreed EU approach for the measurement of PM emissions from smaller [less than 20MW] domestic appliances and some comparisons on stoves have shown enormous differences (>10x) between national standard methods of PM emission estimation*'.

Comments from the Netherlands and from the European Council of Municipalities and Regions stated that the focus should remain on large installations over 50MW, as the contribution to air pollution of small and medium size installation is limited.

Respondents from Germany were generally in favour of regulating small installations. The German Federal Environment Agency proposed a light permitting regime down to 1MW, adding that if a less ambitious EU wide scheme is set up, stricter national requirements should be allowed.

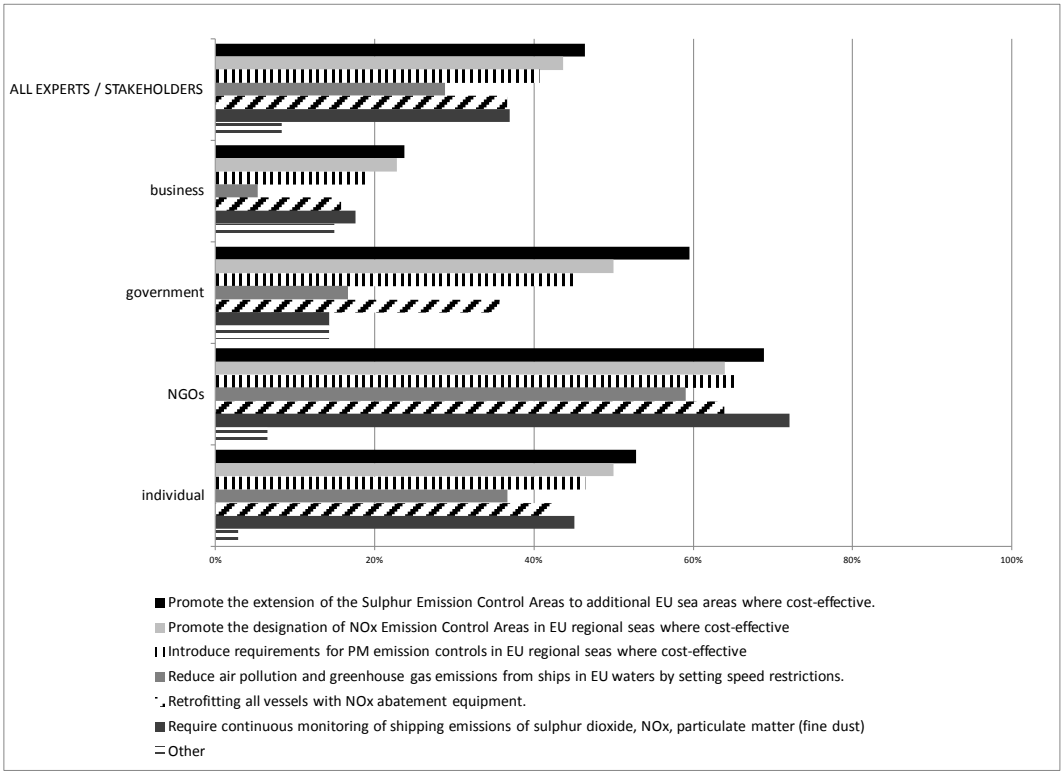
A common response from EU and national **NGOs**, citing health impacts, stated that EU action on small combustion installations should be a priority. They also called for action on emissions coming from existing installations, noting that the Ecodesign Directive only applies to new products and suggest complementary measures, such as the replacement or retrofitting of old installations and the development of alternative energy sources.

Several NGOs considered that small installations (of less than 1MW) should be regulated by the Eco-design directive, and bigger installations (between 1 and 50 MW) by the IED. Generally they favoured a progressive regulation, proportional to the size of the installation: smaller installations (less than 5 MW) subject to an EU wide emission limit values based on the strictest Member States value; those between 5MW and 20MW to a light permitting regime; and beyond 20MW to a full permitting regime, e.g. inclusion in Annex I of the IED.

6.5 Shipping sector

Question 36: Which additional measures should be taken to address air emissions from the shipping sector?

Respondents were asked to choose **one or more** responses.



For the expert/stakeholder responses as a whole, the six options (i.e. not including 'other') all received between 28.8% and 46.6%. A majority of NGO responses chose all six of these options.

Two options were chosen by at least 50% of government and individual expert responses:

> *Promote the extension of the Sulphur Emission Control Areas to additional EU sea areas such as the Irish Sea, the Gulf of Biscay, the Mediterranean and/or the Black Sea provided that such a measure is cost-effective.*
>
> *Promote the designation of NOx Emission Control Areas in EU regional seas where cost-effective (those listed above and/or the Baltic and the North Sea including the English Channel) provided that such a measure is cost-effective.*

None of the options received more than 24% of business responses.

Question 37: Please feel free to comment on your answers regarding regulation of emissions from the shipping sector

Respondents to the questionnaire for experts and stakeholders could provide written comments to this question.

Among the **business** respondents, shipping industry comments and several respondents from the chemical, oil, power and steel industries stated that shipping should be regulated at the international level through the International Maritime Organisation. Some of these respondents added that '*regional measures are usually counterproductive*' and risk '*introducing barriers to trade and ... impact the EU's competitiveness*' (Europia). These responses also stated that future regulation should be proportionate to the contribution of the shipping sector to air pollution and that industry capacity to implement new rules should be assessed prior to their adoption.

One representative of the shipping industry commented that sulphur limits in Sulphur Emission Control Areas are not yet applicable, and for this reason it is too early to take additional measures on emissions from ships now.

Several other business respondents called for financial incentives or market mechanisms to promote emission control technologies and the use of alternative fuels to reduce emissions. Several called for specific actions to reduce shipping emissions, such fuel additives or gaseous fuels. The International Association for the Catalytic Control of Ship Emissions to Air proposed that:

> '*a market mechanism such as the Norwegian NOx Fund [be] applied to drive the retrofit of vessels with emission control technology with minimum cost impact to the industry. It is widely agreed that the NOx Fond has successfully promoted the uptake of retrofitted emission control technology*'.

The Community of European Railway and Infrastructure Companies called for speed restrictions on ships in EU waters to reduce their emissions.

Among **government** respondents, comments from Belgium and Estonia were in favour of stricter rules for the shipping sector, such as an ECA coverage for all European seas. A Swedish comment stated that '*while land based sources continue to reduce their emissions of air pollutants the*

emissions from the shipping sector is growing'. According to the Scottish Environment Protection Agency, '*the introduction of measures which deliver co-benefits for air quality and climate change should be prioritised*', such as controls of black carbon emissions and measures to mitigate ozone precursor emissions from shipping.

Other government respondents, however, raised concerns about possible measures. According to DEFRA in the UK, '*no scientific analysis or cost benefit analysis has yet been produced to support a SECA in the Irish Sea*' and '*any proposals to revise the existing limits in MARPOL Annex VI would need to be supported by scientific evidence, justified in terms of costs and benefits and have support from the relevant coastal states*'. A response from the Netherlands stated that the designation of ECAs should '*avoid distortion of the level playing field for harbours in these areas*'.

Several respondents underlined the role of incentives for clean technologies and fuels: for example, one comment suggested that '*EU funding criteria should be streamlined in order to facilitate the use of these funds for national/regional retrofit programmes of such vessels*'.

A combined comment from EU and national **NGOs** as well as some **individual expert**s underlined that '*like for the agriculture sector, air pollution from shipping is projected to increase and a lack of action will undermine efforts made in other sectors*'. Several respondents also highlighted the impacts of secondary PM generated from SO_2 or NOx from shipping on health. These comments called for an integrated approach for all air emissions with combined SO_2/PM/NOx Emission Control Areas in all European seas.

One respondent added that '*greater regulatory attention should be placed on proper enforcement mechanisms, including continuous on- board emission monitoring, and that comprehensive plans to limit emissions of all pollutants at large ports should be developed*'.

Some individual experts also called for requirements to supply land-based power to ships in port.

6.6 Questionnaire for the general public: written comments on air pollution sources

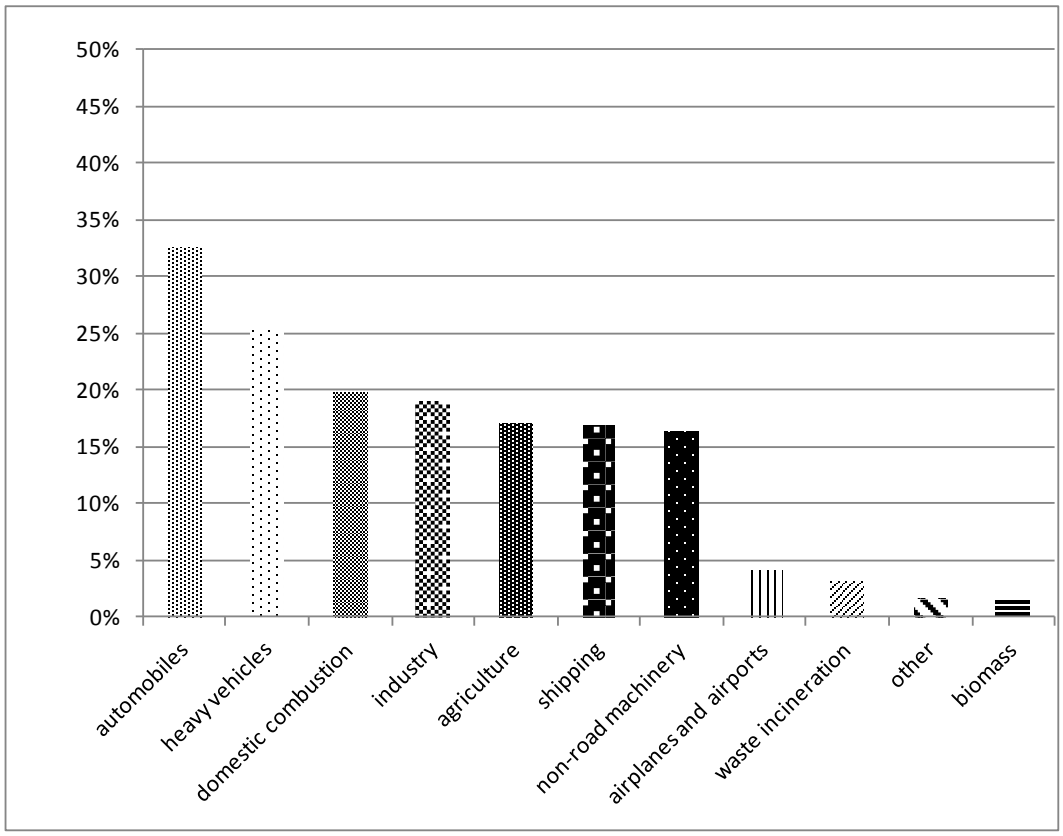
Although the questionnaire for the general public did not ask about measures to address air pollution sources (in either closed or open questions), in their written comments many respondents highlighted specific sectors which they see as responsible for a major share of air pollution. Moreover, these responses often called for specific policy actions to address sector-related air pollution. In the analysis, the following sectors were identified: agriculture, biomass, non-road machinery, shipping, domestic combustion, waste incineration, industry, automobiles, heavy vehicles, airplanes and airports, and other sectors.[6]

Across the 883 written comments, specific sectors as sources of air pollution were mentioned 1386 times (with multiple references for many comments). As shown in the figure below, the sector most frequently mentioned was automobiles (287 comments, 32.5% of all written comments)[7], followed by heavy vehicles (223 comments, 25.3%). Together, automobiles and heavy vehicles make up 37% of the sector-specific comments. Between 15% and 20% of all comments referred to domestic combustion, industry, agriculture, shipping and non-road machinery, respectively. As certain sectors were specifically often mentioned by respondents from certain Member States, it seemed useful to analyse the comments per country.

[6] The category 'other' includes deforestation, which was mentioned 3 times

[7] A few references to scooters and mopeds were included under automobiles.

References to sectors in written comments to the questionnaire for the general public: share of all written comments (N=883, multiple entries possible)



The following patterns were identified in these comments:

- The answers are highly influenced by *respondents from the Netherlands*. Over 80% of the comments on agriculture, shipping and non-road machinery and over 75% of the comments on domestic combustion and industry came from Dutch respondents; furthermore, this group also figured prominently in the comments on automobiles (55.1%) and heavy vehicles (61.4%). Many respondents from the Netherlands, plus some from Germany, provided largely similar comments.
- *Airplanes and airports:* 61% of the French respondents mentioning sectors referred to air pollution from air traffic and airports. Other references to this sector came from Germany, the UK, Italy, Belgium, the Netherlands and Austria.
- *Automobiles and heavy vehicles:* In addition to the high number of references from Dutch respondents, this category was influenced by responses from Belgium (27.5% of the comments on automobiles and 30.9% of the comments on heavy vehicles).
- *Waste incineration:* Most comments on waste incineration came from Italy (44%), Poland (26%) and the UK (18%).
- *Domestic combustion:* Comments from the Netherlands and Germany addressed this sector; many comments on domestic combustion came from respondents from Poland and Denmark, many mentioning air pollution problems caused by wood stoves.
- *Biomass:* The comments on air pollution related to biomass came mainly from Italy, the UK and Denmark.

Many respondents also referred to the types of policy mechanisms by which the EU and national or local governments should address air pollution from the sources. Often, these means were mentioned in the context of pollution by one or more specific sectors or pollutants. For example, many of the comments concerning automobiles and heavy vehicles referred to local traffic problems and come hand in hand with requests for local traffic measures such as car-free zones. The following sub-categories were identified:

Low-emission technology and products	50
Better management, especially for local traffic	66
Removing subsidies and related actions	79
Financial incentives	43
Agreements with sectors	4
Enforcement	125
Awareness-raising	80

Promoting low-emission technology and products

Overall *50 respondents* mentioned low-emission technologies and products in their comments. Many respondents say that electric, hydrogen or CNG automobiles would be a good means to reduce emissions. One example follows:

> *' I believe that legislation should completely compel manufacturers wishing to sell cars to the European market to manufacture hybrid or electric vehicles across the board thereby driving prices down to attainable levels for the common man.'*

Others comments referred to better measuring techniques and one respondent calls for particulate controls for small combustion. Some respondents simply said that certain technologies existed and that they could prevent air pollution.

A number of comments in this sub-category called on government to subsidise certain technologies (in which case the sub-category "financial incentives" was also coded).

Better management

This category included measures to improve coordination between national and local government as well as industry and citizens, measures for local institutional capacity and local traffic measures.

Comments that were coded in this subcategory for example referred to measures that would avoid waste from coal plants, better maintenance of automobiles, the reduction of old cars in cities, and the building of routes outside cities and around green spaces.

Of the *66 respondents* who called for better management actions to reduce emissions:

- 28 referred to local traffic measures
- 16 called for preventive measures
- 37 referred to issues of local institutional performance and
- 22 comments specifically mentioned management issues related to automobiles and road traffic.

Removing subsidies and related actions

This category includes a range of comments calling for measures to make high emission activities a more costly choice and therefore incite low-emission alternatives. The best example for this kind of measure is a higher taxation of diesel, as proposed by several respondents.

One comment, for example, called for:

'Stop subsidising directly or indirectly so-called low cost air transportation, in order to reduce air traffic beyond necessity, instead invest in additional capacity and quality for railways, allowing them to compete or substitute air transportation. Encourage employment near living areas, discourage use of corporate owned cars for private transportation, this being an additional de facto contribution to road traffic, jams and pollution.'

Some respondents, notably from Italy, called for an end to subsidies on biomass combustion and waste incineration plants.

Financial incentives

In total, 43 respondents requested public subsidies for low-pollution actions, such as the production and further development of electric cars. The following example addressed shipping:

If the EU is really considered about the environment it should consider subsidies for stimulating EU ship owners to change to LNG or dual fuel systems.

Agreements with sectors

Only 4 respondents called for increased collaboration between government and economic sectors to reduce emissions.

Enforcement and inspection by the Member States

Comments classified in this category called on national governments to impose stricter rules or control existing rules better and referred to enforcement actions in case of infringement of national law by companies or individuals. 125 respondents indicated that stronger enforcement of national law and better inspection could help emission reduction.

Awareness raising activities

In total, 80 respondents called for awareness raising activities, mainly regarding information on air quality and its impacts on health. These comments requested: greater comparisons between air pollution levels in local areas or Member States; programmes in schools; and campaigns against polluting practices (e.g. wood combustion or waste incineration). One comment from the Netherlands, for example, stated that:

'Make it clear and visible to the public what the situation is now and what it should be on a European level, a national level, regional level and local level. Make comparisons between several member states and regions and cities within the member states. Make a list of best practices. Why are some regions successful and why are others not successful.'

Another comment from the Netherlands addressed wood combustion:

'Campaigns that make people aware that for instance burning wood has quite a negative impact on the air quality might help, but then the 'green' energy delivered should be made less expensive.'

A comment from the Czech Republic stated that:

'Without explaining consequences among human activities, air pollution and health or environmental risks on all levels air quality management will never be effective. That is why I think huge raising awareness campaigns and programmes on European and national levels are essential.'

7 Further comments

Question 38. Any further comments related to the revision of the Thematic Strategy on Air Pollution.

The questionnaire for experts and stakeholders had this final question.

In the responses from **business**, several common points are seen across many comments, including the following:

- New EU measures should in general not go beyond the new requirements set under the Gothenburg protocol, or beyond other international agreements
- Where relevant, international action should be pursued before EU action in order to ensure Europe's competitiveness
- The focus should be on implementing current legislation before developing more stringent regulations
- Further measures should include sector-specific approaches, with a balanced approach across sectors
- Innovation should be supported
- Measures should ensure coherence with other policies
- Policy measures should follow business investment cycles

Regarding international action, for example, respondents from the air transport sector stated that:

> *'[The] contribution of aircraft emissions to local air quality problems is relatively small and that emissions from aircraft engine are subject to global certification standards adopted by the International Civil Aviation Organization (ICAO). Since the first international emissions certification standard for aircraft engines was adopted in 1981, it has been made 50% more stringent. It is therefore important that the EU and its Member States continue to address emissions from aircraft engines through ICAO and support the work undertaken in ICAO's Committee on Aviation Environmental Protection.'*

Many business respondents highlighted the role of the Directive on Industrial Emissions (IED). For example, comments from the steel industry stated that the IED '*is the best tool to ensure the continual improvement of environmental performance and creates a level playing within the European industry and emissions from industry have been reduced substantially over the last two decades... The revised TSAP must integrate the IED and cannot set new rules that would contradict the IED commitments*'.

A French pharmaceutical association listed several studies which provide evidence of the link between air pollution and allergies.

The European Confederation of Fuel Distributors suggested the '*development of appropriate standards for heating oil products*' and specific standards regarding sulphur content, colour, density and quality of heating oil. The European Heating Oil Association pointed out that energy efficient domestic heating contributes to an improved environmental protection.

Among the **government** responses, comments from several bodies in the Netherlands referred to a lack of institutional capacities at local level. These respondents also underlined the importance of source-based measures to reduce emissions, and stated that the effect of such measures should

be evaluated in 2020 before a decision on potentially lower limit values for the long term can be taken.

A few responses from Germany highlighted the need for greater coherence among EU requirements for air quality, national emissions ceilings and source standards.

One response from the UK called for integration with other policy areas to ensure maximum benefits and the development of measures in conjunction with a low-carbon, green economy.

Several EU and national **NGOs** provided a common comment that highlighted the '*most important issues*'. These respondents called for:

- EU-wide emission reduction measures in key sectors, i.e. agriculture (ammonia and PM); international shipping (SO_2, NOx, PM); domestic solid-fuel combustion (PM, VOCs); non-road mobile machinery (NOx, PM); road vehicles (NOx, PM); solvent use (VOCs), and small (1-50 MW) industrial combustion plants (NOx, SO_2, PM).
- New, stricter national emission ceilings under the National Emissions Ceilings Directive, with binding ceilings for 2020, 2025 and 2030. The level of ambition for 2020 should go significantly beyond those of the revised Gothenburg Protocol and the 2005 Thematic Strategy on Air Pollution, and for 2030 the level of ambition aim should be to achieve – to the extent possible – the long term objectives of the 6th EAP.
- Greater infringement action under Ambient Air Quality Directive against Member States to encourage achievement of air quality standards and thus better protect citizens.
- Strengthen EU air quality standards in line with the latest WHO recommendations.

Several EU-wide NGOs and a French NGO also called for action on indoor air quality.

Some NGOs wrote that air transport emissions should be addressed. One comment, for example, stated that '*it is highly shocking not to find any mention or proposal regarding air pollution generated by air transport*'. Two regional NGOs recommended promoting the living environment of children, and other vulnerable groups. They request the development of a '*child standard*'.

A comment by the Regulatory Assistance Project (RAP) called for:

- greater inter-DG collaboration
- a multi-pollutant approach that prioritizes the most cost-effective measures to achieve multiple EU objectives (e.g. energy efficiency)
- comprehensive EU guidance (and implementation support) presenting a standardized process for MS on how to develop and implement air quality plans

Comments from **individual experts** were very diverse and often brought up issues that were already mentioned under other questions. Overall, many asked for further action by the EU, though one individual expert wrote that the EU should not introduce new measures for economic reasons.

Among the comments:

- One individual expert called for the conservation of forests because of their vital function for air quality.
- Another individual stated that the EU should collaborate more strongly with the US on climate and air pollution issues and that it might be necessary to regulate free markets in order to avoid competition handicaps.
- Another comment affirmed that '*sound policy should be limited to those measures for which the marginal costs are significantly below the estimated marginal benefits*'.

Annex I. Questionnaire for the general public

Consultation on options for revision of the EU Thematic Strategy on Air Pollution and related policies

Welcome to the Consultation on the review of the EU Thematic Strategy on Air Pollution and related policies.

This questionnaire is intended to inform the current review of the Thematic Strategy on Air Pollution of the EU. The review evaluates the progress made towards both the interim and long-term objectives as well as the overall fitness of the EU Air Quality policy framework, with a view of confirming, updating and strengthening the existing objectives. More information on the current review process can be found in the **explanatory notes accompanying the public consultation**.

The questionnaire consists of five sections and asks your opinion about the following issues and drivers: ensuring compliance with EU air quality requirements; reducing exposure to damaging air pollution in the long term; revising the Ambient Air Quality Directive (AAQD); and revising the National Emission Ceilings Directive (NECD). The questions included in the survey are mostly multiple choice; you will be able to provide any written comments at the end of the questionnaire.

The questionnaire should take approximately 15-20 minutes of your time. Your answers are saved as long as a network connection is established. If your browser is closed it might be possible to recover answers, but this however cannot be guaranteed. For this reason, we encourage you not to interrupt the session once you have started the questionnaire. You may wish to download the text of the questionnaire from the main consultation page in order to examine the questions and elaborate on your replies before starting an on-line session.

Once you have submitted your answers, you will have the option to download a copy of your answers.

Unless you specify otherwise, your contribution will be published on the Commission's website. In the introductory section, you will be given the opportunity to indicate whether you wish your contribution to be anonymous.

This document does not represent an official position of the European Commission. It is a tool to explore the views of interested parties. The suggestions contained in this document do not prejudge the form or content of any future proposal by the European Commission.

Questions marked with an asterisk *require an answer to be given.

Section 1/5: Introductory Questions

A. Please indicate the country where you reside: *

- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom
- Rest of Europe
- Outside Europe

B. Please indicate your title and name: * (maximum 150 characters)

C. Do you now work on air pollution issues, or have you done so in the past? *

- Yes, air pollution has been an area of my professional work
- No

D. What type of area do you live in? *

- Rural area
- Suburban area
- Urban area: town/small city
- Urban area: large city

Unless you specify otherwise, your contribution will be published on the Commission's website. Please indicate here if you wish your contribution to be anonymous. (For full information please refer to the Specific Privacy Statement point 3) *

- ( ) You can publish this contribution as it is.
- ( ) Please make this contribution anonymous.

Section 2/5: Ensuring compliance with EU air quality requirements

The current EU-wide framework for air pollution control consists of three main elements: (1) a legal regime for air quality management in zones and agglomerations; (2) caps on emissions at a national level; (3) source specific emission legislation established at Union level. This is described further in the **explanatory notes accompanying the public consultation**.

Current compliance situation:

EU air quality limit values must be achieved everywhere, but many EU Member States do not comply with those set in the Ambient Air Quality Directive 2008/50/EC (AAQD) for several pollutants. As a consequence, the European Commission is currently pursuing infringement cases with a number of Member States, whilst also supporting exchange of information on best practices to achieve compliance. However, other options to ensure widespread compliance in the short term should also be considered.

The implementation of the National Emissions Ceilings Directive 2001/81/EC (NECD) generally gives a more encouraging picture. Most of the 2010 ceilings should be complied with, with the notable exception of the NOx (nitrogen oxides) ceilings, which are exceeded in many Member States.

Reasons for non-compliance include the transboundary fluxes of pollutants across national borders, lack or limited efficacy of emission controls in certain sectors (for instance road transport and residential heating), and the lack of coordination between national and local levels on air quality management.

For further information regarding non-compliance with the current air policy framework, please see Sections 4.1 and 6.1 of the **explanatory notes accompanying the public consultation**.

1.How should the EU modify or supplement its approach to ensure compliance with current air quality legislation? (Please choose one or more responses) * (at least 1 answer)

- [ ] No adjustment of the approach described above is needed.
- [ ] Additional non-legislative options: for example by establishing partnership agreements with MS that focus Member State efforts to address non-compliance with air quality objectives
- [ ] Relaxing the obligations under Ambient Air Quality Directive
- [ ] Strengthening emissions controls: for example more stringent emissions ceilings or source controls that support the attainment of air quality limit values
- [ ] Don’t know

1a.Which option should be considered as additional non-legislative measures? (Please choose one or more responses) * (at least 1 answer)

- [ ] Governance support, for example through competence building programmes and guidance on increased and more effective use of existing EU funding sources
- [ ] Partnership implementation agreements negotiated between the Commission and Member States in infringement, where further legal action would be suspended subject to proper implementation of agreed transparent and binding programmes to address air pollution
- [ ] Other
- [ ] Don't know

1b.Which options should be considered to relax obligations under the AAQD? (Please choose one response) *

- ( ) Weaken those air quality limit values for which there is currently widespread non-compliance (in particular PM and NO2)
- ( ) Postpone the date for attainment of the existing limit values
- ( ) Other
- ( ) Don't know

1c.Which options should be considered to set more stringent obligations on air pollution emissions? (Please choose one response) *

- ( ) Set more stringent emission ceilings for 2020 in a revised EU National Emissions Ceilings (NEC) Directive. This option would set the priority on air pollution measures taken by national authorities to meet the ceilings
- ( ) Set more stringent emission source controls at an EU level (e.g. on combustion plants, motor vehicles and other sources), focusing on the sectors where measures to reduce emissions will be most cost effective in terms of improving air quality
- ( ) Combine, in a matched approach, more stringent national ceilings under the NEC Directive with more stringent source controls at EU level
- ( ) Other
- ( ) Don't know

Section 3/5: Further reducing exposure to damaging air pollution in the medium to long term

The EU's long-term objective for air policy is the attainment of '*levels of air quality that do not give rise to significant negative impacts on, and risks to human health and the environment*', and successive phases of air policy are designed to move towards this by setting interim standards and objectives designed to tap as much as

possible the medium term improvement potential. The World Health Organisation advises that the present air quality standards are insufficient to protect human health and the environment, notably for PM and O_3, and so the revision of the Thematic Strategy will consider the possibility of setting further, more ambitious objectives.

For further information regarding reducing exposure to damaging air pollution in the medium to long term, please see Section 6.3 of the **explanatory notes accompanying the public consultation**.

Sub-section 3.1: Ensuring coherence between air pollution and climate change policies

The Commission's work programme for 2013 foresees a new climate and energy framework for the 2030 time horizon. This will, in all likelihood, also inform ongoing international negotiations on a new legally binding climate agreement that is expected to be agreed before the end of 2015. The relation between the forthcoming air and climate policies, which address many of the same substances and sources, is an important strategic issue.

There are both synergies and trade-offs to consider. Improved energy efficiency and renewable energy sources mostly reduce air pollution as well as climate pollution. (An exception is biomass, which can result in increased emissions of particulate matter and poly-aromatic hydrocarbons (PAHs).) Some air pollutants also act as short-lived climate pollutants (SLCP): potent climate forcers over their shorter lifetimes in the atmosphere compared to other climate gases such as CO_2. The main ones are a fraction of particulate matter known as black carbon, and ground level ozone.

2. How should future EU air pollution policy interact with a new climate and energy framework for 2030? (Please choose one response) *

- ○ It should maximise the synergies between the policies, but with no new air pollutant emissions reductions except those delivered by the climate and energy policy
- ○ It should maximise the synergies between the policies, and set out additional measures to reduce air pollutant emissions and improvements to air quality
- ○ Other
- ○ Don’t know

3. Should specific complementary action in the EU be pursued to curb emission of short-lived climate pollutants (SLCP) and their precursors, to improve both air quality impacts on health but also to boost climate mitigation in the short term? *

- ○ Yes
- ○ No
- ○ Don't know

3a. Should specific complementary action be pursued to curb black carbon emissions? (Please choose one response)

- Yes
- No
- Don't know

3b. Should specific action to address ozone precursors that are short-lived climate pollutants, such as methane, be reinforced? (Please choose one response)

- Yes
- No
- Don't know

Sub-section 3.2: Strategic approach and target year of future air pollution policy

The amount of additional progress on air quality the EU should aim for is defined in terms of reducing impacts on both human health and the environment.

The greatest reduction that can be achieved is called the maximum technically feasible reduction (MTFR), which would be the outcome of applying every pollution control measure available in the market, irrespective of cost.

Some such control measures are much more expensive than others; by concentrating efforts on the more affordable ones it is therefore possible to deliver a substantial share of the MTFR at only a fraction of the cost, ensuring that the environmental and health benefits outweigh the costs incurred to reduce emissions.

4. How much additional progress should EU air pollution policy pursue in the revised Thematic Strategy? (Please choose one response) *

- No change: only the level of protection delivered by current legislation
- The level delivered by the forthcoming climate and energy framework for 2030, without additional air pollutant emission reductions
- Substantial progress beyond the climate and energy framework, towards the maximum achievable pollution reduction
- The maximum achievable pollution reduction (MTFR)
- Don't know

Sub-section 3.3: Setting Priorities

EU air pollution policy and legislation addresses impacts on both human health and the environment (including both impacts on the natural environment as well as those on crops). While both goals will remain, legislation could set a priority on achieving further reductions.

For further information on the emission control measures that are most effective to improve on either health or environmental impacts, please see Section 4.3 and Annex A of the **explanatory notes accompanying the public consultation.**

5. How should EU air pollution policy give priority to addressing either human health or the environment? (Please choose one response)*

- ○ Equal weight to both
- ○ Give priority to addressing human health impacts
- ○ Give priority to addressing environmental impacts
- ○ Other
- ○ Don't know

Section 4/5: Revising the Ambient Air Quality Directive (AAQD)

The Ambient Air Quality Directive sets binding limit values for the maximum concentrations in ambient air of eight pollutants: sulphur dioxide (SO_2), nitrogen dioxide (NO_2) and oxides of nitrogen (NOx), particulate matter (PM_{10} and $PM_{2.5}$), lead (Pb), benzene (C_6H_6) and carbon monoxide (CO). The Directive also sets non-binding target values for ground-level ozone (O_3). Limit or target values are expressed as short-term (8-hour or daily) averages, or long-tern (annual) averages, and for some pollutants both kinds are set.

Sub-section 4.1a: Aligning with latest scientific and technical knowledge

The World Health organization (WHO) has identified guidance values for ambient concentrations of major pollutants to protect human health; these are more stringent than the limit values currently set in the AAQD. The reference levels in the table below include EU limit or target levels and WHO air quality guidelines (AQG).

Table of EU limit or target values vs WHO guidelines for air quality (all levels in $\mu g/m^3$ except where otherwise indicated, averaging periods also listed).

Pollutant	EU reference value	WHO reference level
PM2.5	Year (25)	Year (10)
PM10	Day (50)	Year (20)
O3	8 hour (120)	8 hour (100)
NO2	Year (40)	Year (40)
BaP	Year (1ng/m3)	Year (0.12 ng/m3)
SO2	Day (125)	Day (20)
CO	8-hour (10mg/m3)	8-hour (10mg/m3)
Pb	Year (0.5)	Year (0.5)
C6H6	Year (5)	Year (1.7)

Source EEA

Particulate matter includes several different components. A specific limit value of 25 µg/m^3 is set for fine particles ($PM_{2.5}$), as long-term exposure to this pollutant has been found to have strong health effects. The AAQD calls for a review of this limit value by 2013, with a view to tightening it indicatively to 20µg/m^3subject to feasibility

6. Should the indicative limit value for PM2.5 of 20 µg/m3 for 2020 be made mandatory? (Please choose one response *

- Yes
- No
- Don't know

7. Should the $PM_{2.5}$ or other limit values in the AAQD be made more stringent to bring them closer to WHO guidance values? (Please choose one response)*

- No change
- Yes, review the limit values and bring them closer to WHO guidance values
- Bring AAQD limit values closer to WHO guidance values only in the future, once the EU has made further emissions reductions
- Don’t know

Sub-section 4.1b: Aligning with latest scientific and technical knowledge (black carbon)

Another component of PM, black carbon (BC), has health impacts and is also a short-lived climate pollutant. BC is one of the constituents of total PM mass, but requirements to separately monitor or reduce BC concentrations are not established in current air quality legislation. Such requirements may help further reducing health impacts and at the same time have a positive synergistic effect with climate change mitigation.

8. Should monitoring and regulation be introduced for black carbon/elemental carbon? (Please choose one response) *

- Yes, introduce monitoring requirement
- Yes, introduce non-binding target value (along with a monitoring requirement)
- Yes, introduce binding limit value (along with a monitoring requirement)
- No
- Don't know

Sub-section 4.2: Management framework

A significant proportion of the EU population still lives in areas, especially cities, where exceedances of the EU limit values and target values – in particular, for PM, ozone and nitrogen dioxide.

In zones where EU air quality limit values are exceeded, zone-specific action plans for attainment are required. Recent experience indicates that local and regional authorities face substantial difficulties in meeting their responsibilities, as they lack the means to control pollution from outside their regions and from sources, and so must resort to more expensive and less effective local actions. One option to address this is to consolidate zone-specific plans into national action plans, to ensure their coherence. Another option is to focus on transboundary pollution flows that affect the attainment of EU limit values.

9. Should zone-specific plans be consolidated into coordinated national plans? (Please choose one response)*

- Yes
- No
- Don't know

10. Should cooperation among Member States be reinforced to better address transboundary pollution flows that affect local air quality problems? (Please choose one response) *

- Yes
- No
- Don't know

Section 5/5: Revising the National Emission Ceilings Directive (NECD)

The National Emission Ceilings Directive establishes – for 2010 and beyond – upper ceilings for the emission of four pollutants – sulphur dioxide (SO_2), nitrogen oxides (NOx), ammonia (NH_3) and non-methane volatile organic compounds (NMVOC). The ceilings are set so as to limit the long-range transport of air pollutants and their associated health and environmental burden.

Competent authorities for local air quality management are often local administrations, whereas compliance with national emission ceilings is managed at national level. Coherence between national emission reduction plans and local air quality plans could be improved by including additional provisions in the NEC Directive that would require the Member States to take explicit account of existing and projected air quality non-compliances when developing emission reduction plans, which could then be optimised to deliver also air quality benefits at the same time.

Sub-section 5.1: Aligning with latest scientific and technical knowledge

With the incorporation of the revision of the Gothenburg Protocol into EU law, ceilings will be set for $PM_{2.5}$, a component of primary particulate matter. To ensure coherence with the Gothenburg Protocol, ceilings for $PM_{2.5}$ will need to be established also for a revised NEC Directive. The revised NEC Directive could however go further and set ceilings also for black carbon (another component of particulate matter with both health and climate change impacts), or for other pollutants, provided that appropriate emission inventories are in place.

11. Should national emission ceilings be adopted for black carbon/elemental carbon? (Please choose one response)

- ○ Yes
- ○ No
- ○ Don't know

Sub-Section 5.2: Management framework

Competent authorities for local air quality management are often local administrations, whereas compliance with national emission ceilings is managed at national level. Coherence between national emission reduction plans and local air quality plans could be improved by including additional provisions in the NEC Directive that would require the Member States to take explicit account of existing and projected air quality non-compliances when developing emission reduction plans, which could then be optimised to deliver also air quality benefits at the same time.

12. Should coordination be required between the national and local levels in respect of emissions reduction measures and local air quality management? (Please choose one response)*

- ○ Yes
- ○ No
- ○ Don't know

Final comments

13. Please feel free to provide any further comments related to the revision of the Thematic Strategy on Air Pollution:(maximum 2400 characters)

Annex II. Questionnaire for Experts and Stakeholders

Consultation on options for revision of the EU Thematic Strategy on Air Pollution and related policies

Welcome to the Consultation on the review of the EU Thematic Strategy on Air Pollution and related policies.

This questionnaire is intended to inform the current review of the Thematic Strategy on Air Pollution of the EU. The review evaluates the progress made towards both the interim and long-term objectives as well as the overall fitness of the EU Air Quality policy framework, with a view of confirming, updating and strengthening the existing objectives. More information on the current review process can be found in the **explanatory notes accompanying the public consultation**.

The questionnaire consists of six sections and asks your opinion about the following issues and drivers: ensuring compliance with EU air quality requirements and coherence with international commitments; reducing exposure to damaging air pollution in the long term; revising the Ambient Air Quality Directive (AAQD); revising the National Emission Ceilings Directive (NECD); and addressing major air pollution sources, such as road and off-road transport, agriculture, small/medium combustion sector, and the shipping sector. The questions included in the survey are a mix of multiple choice and free answer questions.

The questionnaire should take approximately 20-40 minutes of your time. Your answers are saved as long as a network connection is established. If your browser is closed it might be possible to recover answers, but this however cannot be guaranteed. For this reason, we encourage you not to interrupt the session once you have started the questionnaire. You may wish to download the text of the questionnaire from the main consultation page in order to examine the questions and elaborate on your replies before starting an on-line session.

Once you have submitted your answers, you will have the option to download a copy of your answers.

Unless you specify otherwise, your contribution will be published on the Commission's website. In the introductory section, you will be given the opportunity to indicate whether you wish your contribution to be anonymous.

This document does not represent an official position of the European Commission. It is a tool to explore the views of interested parties. The suggestions contained in this document do not prejudge the form or content of any future proposal by the European Commission.

Questions marked with an asterisk * require an answer to be given.

Section 1/6: Introductory Questions

A. Are you responding to this consultation as an individual or on behalf of an organisation? *

- As an individual
- On behalf of an organisation

A1. What type of organisation do you represent? *

- government (national)
- government (regional)
- government (local)
- government: international organisation
- business: industrial interest group, business association, sectoral association
- business: enterprise/company (large): more than 250 employees
- business: enterprise/company (medium): 50 to 250 employees
- business: enterprise/company (small): 10 to 50 employees
- business: enterprise/company (micro): up to 10 employees
- business: self-employed
- NGO, civil society, environmental group or charity, consumer group
- research: university
- research: public institution
- research: private institution
- other

A1a. Please specify the sector of your activity (e.g. health, environment, transport, energy, multi-sector):
(maximum 200 characters)

A2. Does your organisation work mainly on an EU-wide basis or in a single country? *

- EU-wide
- Focus on a single country
- Other (please elaborate below in question D)

A3. Please indicate the country where your organisation is located: *

- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom
- Rest of Europe
- Outside Europe

A4. Please indicate the name of your organisation: * (maximum 150 characters)

A5. Please indicate your name and title: * (maximum 150 characters)

Aa1. Please indicate the country of your residence: *

- Austria
- Belgium
- Bulgaria
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden
- United Kingdom
- Rest of Europe
- Outside Europe

Aa2. Please indicate your title and name: * (maximum 150 characters)

B. Do you now work on air pollution issues, or have you done so in the past? *

- Yes, air pollution has been the main focus of my professional work
- Yes, air pollution has been one issue in my professional work
- No

C. What type of area do you live in? *

- Rural area
- Suburban area
- Urban area: town/small city
- Urban area: large city

D. Please feel free to provide any further details regarding your answers to the introductory questions:
(maximum 800 characters)

Unless you specify otherwise, your contribution will be published on the Commission's website. Please indicate here if you wish your contribution to be anonymous. (For full information please refer to the Specific Privacy Statement point 3) *

- ○ You can publish this contribution as it is.
- ○ Please make this contribution anonymous.

Section 2/6: Ensuring compliance with EU air quality requirements and coherence with international commitments in the short term

The current EU-wide framework for air pollution control consists of three main elements: (1) a legal regime for air quality management in zones and agglomerations; (2) caps on emissions at a national level; (3) source specific emission legislation established at Union level.

Current compliance situation:

EU air quality limit values must be achieved everywhere, but many EU Member States do not comply with those set in the Ambient Air Quality Directive 2008/50/EC (AAQD) for several pollutants. As a consequence, the European Commission is currently pursuing infringement cases with a number of Member States, whilst also supporting exchange of information on best practices to achieve compliance. However, other options to ensure widespread compliance in the short term should also be considered.

The implementation of the National Emissions Ceilings Directive 2001/81/EC (NECD) generally gives a more encouraging picture. Most of the 2010 ceilings should be complied with, with the notable exception of the NOx (nitrogen oxides) ceilings, which are exceeded in many Member States.

Reasons for non-compliance include the transboundary fluxes of pollutants across national borders, lack or limited efficacy of emission controls in certain sectors (for instance road transport and residential heating), and the lack of coordination between national and local levels on air quality management.

Coherence between EU and international commitments:

Transport of air pollution from outside the EU has a significant effect on Europe's air quality, and the EU works to regulate this in several international conventions, the main one being the Gothenburg Protocol to the UNECE Convention on Long-Range Transboundary Air Pollution. EU legislation was in line with the Gothenburg requirements, but the international situation has now moved on. New Gothenburg ceilings have recently been set for 2020, including a new ceiling for primary PM emissions, as well as certain flexibility mechanisms.

The Commission intends to review the NECD to re-establish alignment, including a ceiling for primary PM emissions and tighter requirements for other pollutants to comply with the new Gothenburg ceilings for those. The Gothenburg ceilings are, however, less ambitious than the emission reductions necessary to achieve the 2020 objectives set in the EU's Thematic Strategy on Air Pollution. The issue of emission ceilings for beyond 2020 is taken up later in the questionnaire.

For further information on compliance with EU air quality requirements and coherence with international commitments in the short term, please see the **explanatory notes accompanying the public consultation**, particularly Sections 4.1, 4.2 and 6.1.

1. How should the EU modify or supplement its approach to ensure compliance with current air quality legislation? * (Please choose one or more responses)(at least 1 answers)

- [ ] No adjustment of the approach described above is needed.
- [ ] Additional non-legislative options: for example by establishing partnership agreements with MS that focus Member State efforts to address non-compliance with air quality objectives
- [ ] Relaxing the obligations under Ambient Air Quality Directive
- [ ] Strengthening emissions controls: for example more stringent emissions ceilings or source controls that support the attainment of air quality limit values
- [ ] Don't know

1a.Which options should be considered as additional non-legislative measures? (Please choose one or more responses)* (at least 1 answers)

- [ ] Governance support, for example through competence building programmes and guidance on increased and more effective use of existing EU funding sources
- [ ] Partnership implementation agreements negotiated between the Commission and Member States in infringement, where further legal action would be suspended subject to proper implementation of agreed transparent and binding programmes to address air pollution
- [ ] Other (please describe below in question 2)
- [ ] Don't know

1b.Which options should be considered to relax obligations under the AAQD? (Please choose one response) *

- ( ) Weaken those air quality limit values for which there is currently widespread non-compliance (in particular PM and NO2)
- ( ) Postpone the date for attainment of the existing limit values.
- ( ) Other (please describe below in question 2)
- ( ) Don't kn

1c.Which options should be considered to set more stringent obligations on air pollution emissions? (Please choose one response) *

- Set more stringent emission ceilings for 2020 in a revised EU National Emissions Ceilings (NEC) Directive. This option would set the priority on air pollution measures taken by national authorities to meet the ceilings.
- Set more stringent emission source controls at an EU level (e.g. on combustion plants, motor vehicles and other sources), focusing on the sectors where measures to reduce emissions will be most cost-effective in terms of improving air quality
- Combine, in a matched approach, more stringent national ceilings under the NEC Directive with more stringent source controls at EU level
- Other (Please describe below in question 2)
- Don't know

1d.What further level of ambition (if any) should the revised NEC Directive aim for in 2020? (Please choose one response)

- The NEC Directive should only match the recently-agreed 2020 ceilings in the so called Gothenburg Protocol under the UNECE Convention on Long Range Transboundary Air Pollution
- The NEC Directive ceilings for 2020 should go beyond the 2020 Gothenburg ceilings in order to achieve the objectives in the Thematic Strategy on Air Pollution
- The NEC Directive ceilings for 2020 should go beyond the 2020 Gothenburg ceilings and the Thematic Strategy on Air Pollution in order to support further objectives for air pollution reduction, including supporting the attainment of air quality limit values
- Other (Please describe below in question 2)
- Don't know

2. Please feel free to provide written comments on the course of action to ensure compliance with the current air quality legislation: (maximum 1200 characters)

Section 3/6: Further reducing exposure to damaging air pollution in the medium to long term

The EU's long-term objective for air policy is the attainment of '*levels of air quality that do not give rise to significant negative impacts on, and risks to human health and the environment*', and successive phases of air policy are designed to move towards this by setting interim standards and objectives designed to tap as much as possible the medium term improvement potential. The World Health Organisation advises that the present air quality standards are insufficient to protect human health and the environment, notably for PM and O_3, and so the revision of the Thematic Strategy will consider the possibility of setting further, more ambitious objectives.

For further information regarding reducing exposure to damaging air pollution in the medium to long term, please see section 6.3 of the **explanatory notes accompanying the public consultation**.

Sub-section 3.1: Ensuring coherence between air pollution and climate change policies

The Commission's work programme for 2013 foresees a new climate and energy framework for the 2030 time horizon. This will, in all likelihood, also inform ongoing international negotiations on a new legally binding climate agreement that is expected to be agreed before the end of 2015. The relation between the forthcoming air and climate policies, which address many of the same substances and sources, is an important strategic issue.

There are both synergies and trade-offs to consider. Improved energy efficiency and renewable energy sources mostly reduce air pollution as well as climate pollution. (An exception is biomass, which can result in increased emissions of particulate matter and poly-aromatic hydrocarbons (PAHs).) Some air pollutants also act as short-lived climate pollutants (SLCP): potent climate forcers over their shorter lifetimes in the atmosphere compared to other climate gases such as CO_2. The main ones are a fraction of particulate matter known as black carbon, and ground level ozone. For further information on synergies between air pollution and other policies, please refer to Section 5.5 of the **explanatory notes accompanying the public consultation**.

3. How should future EU air pollution policy interact with a new climate and energy framework for 2030?

(Please choose one response) *

- ○ It should maximise the synergies between the policies, but with no new air pollutant emissions reductions except those delivered by the climate and energy policy
- ○ It should maximise the synergies between the policies, and set out additional measures to reduce air pollutant emissions and improvements to air quality
- ○ Other (please describe below in question 5)
- ○ Don't know

4. Should specific complementary action in the EU be pursued to curb emission of short-lived climate pollutants (SLCP) and their precursors, to improve both air quality impacts on health but also to boost climate mitigation in the short term? *

- Yes
- No
- Don't know

4a.Should specific complementary action be pursued to curb black carbon emissions? (Please choose one response)

- Yes (please decribe below in question 5)
- No
- Don't know

4b.Should specific action to address ozone precursors that are short-lived climate pollutants, such as methane, be reinforced? (Please choose one response)

- Yes (Please see below question 5)
- No
- Don't know

5. Please feel free to provide comments on the interaction between air pollution and climate change policies: (maximum 1200 characters)

Sub-section 3.2a: Strategic approach and target year of future air pollution policy

The AQ review should determine how much additional progress on air quality the EU should aim for, and by when. These issues are linked but for simplicity the questions below deal separately with the time horizon and the extent of progress.

For the time horizon, a longer-term perspective would allow member states and industries to plan investments well in advance and so maximise economic efficiency. On the other hand, setting targets too far in the future (beyond normal policy and investment planning horizons) could delay action without bringing additional economic benefits.

6. Which target year should be the main focus of the revised Thematic Strategy? (Please choose one response) *

- 2025
- 2030
- Other (please comment below in question 8)
- Don't know

6a. If the target year is 2030, should the EU set an interim target for Member States to achieve for 2025 to strengthen the achievement of the 2030 objective? (Please choose one response) *

- Yes, interim targets should be set on an indicative (i.e. voluntary) basis
- Yes, interim targets should be set on a mandatory basis, e.g. via national emissions ceilings
- No, interim targets should not be set
- Don't know

Sub-section 3.2b: Strategic approach and target year of future air pollution policy

The amount of additional progress on air quality the EU should aim for is defined in terms of reducing impacts on both human health and the environment.

The greatest reduction that can be achieved is called the maximum technically feasible reduction (MTFR), which would be the outcome of applying every pollution control measure available in the market, irrespective of cost.

Some such control measures are much more expensive than others; by concentrating efforts on the more affordable ones it is therefore possible to deliver a substantial share of the MTFR at only a fraction of the cost, ensuring that the environmental and health benefits outweigh the costs incurred to reduce emissions.

7. How much additional progress should EU air pollution policy pursue in the revised Thematic Strategy? (Please choose one response) *

- ○ No change: only the level of protection delivered by current legislation
- ○ The level delivered by the forthcoming climate and energy framework for 2030, without additional air pollutant emission reductions
- ○ Substantial progress beyond the climate and energy framework, towards the maximum achievable pollution reduction
- ○ The maximum achievable pollution reduction (MTFR)
- ○ Don't know

8. Please feel free to provide comments on the level of ambition: (maximum 1200 characters)

Sub-section 3.3: Setting Priorities

EU air pollution policy and legislation addresses impacts on both human health and the environment (including both impacts on the natural environment as well as those on crops). While both goals will remain, legislation could set a priority on achieving further reductions:

For further information on the emission control measures that are most effective to improve on either health or environmental impacts, please see Section 4.3 and Annex A of the **explanatory notes accompanying the public consultation**.

9. How should EU air pollution policy give priority to addressing either human health or the environment? (Please choose one response) *

- ○ Equal weight to both
- ○ Give priority to addressing human health impacts
- ○ Give priority to addressing environmental impacts
- ○ Other (Please describe below)
- ○ Don't know

10. Please feel free to provide comments on setting priorities: (maximum 1200 characters)

Sub-section 3.4: Choice of policy instruments

The EU policy framework for air pollution and air quality is articulated across the following instruments, which can be used singly or in combination to take forward the environmental protection objectives set by the proposed strategy:

- International agreements, notably the UNECE Convention on Long-Range Transboundary Air Pollution. Broadening pollutant reduction efforts to include states outside the EU would be a means to address transboundary pollution from those regions.
- EU legislation setting air quality requirements and exposure limits (in particular the Ambient Air Quality Directive). This instrument is mainly effective to trigger action that can be taken at regional level.
- EU legislation establishing national ceilings for emissions of key pollutants (the National Emissions Ceiling Directive). This instrument is mainly effective to trigger action that can be taken at national level, and also provides a means to establish upper limits to the amount of transboundary pollution affecting other member states.
- EU legislation setting direct emission requirements on sources of pollution such as industrial activities, motor vehicles and others. This instrument would ensure that a certain share of the required emission reductions is provided by harmonized measures at EU level; reducing the burden on measures at Member State level.
- Non-legislative methods, including EU funding schemes and programmes to support urban air quality initiatives.

11. Which of the following policy instruments should be given priority to achieve the environmental and health objectives in the period up to 2030? (Please rank as many of the following options as you wish in other of preference from 1 (most preferred) to 6 (least preferred)

a: 1

b: 2

c: 3

d: 4

e: 5

f: 6

	a	b	c	d	e	f
Negotiate new emission reduction commitments for 2030 under the Gothenburg Protocol which are aligned with the ambition level determined for the revised strategy. To be effective, this option would require action to ensure that EU neighbouring countries join and ratify the 2020 emission reduction targets.	○	○	○	○	○	○
In the National Emissions Ceiling Directive, establish emission ceilings for the 2025-2030 period which are aligned with the ambition level determined for the revised strategy.	○	○	○	○	○	○
In the Ambient Air Quality Directive, adapt the AQ limit values for the 2025-2030 period to more stringent levels corresponding to the ambition level determined for the revised strategy.	○	○	○	○	○	○
In EU legislation on emission sources, set more stringent emission requirements for industrial activities, motor vehicles and other air pollution sources, where cost-effective.	○	○	○	○	○	○
Use non-legislative methods, such as existing EU funding schemes, urban air quality programmes, research and innovation actions or awareness raising (please specify in following question).	○	○	○	○	○	○
Other instruments (please provide comments in question 12).	○	○	○	○	○	○

12. Which other instruments should be used? (maximum 1200 characters)

Section 4/6: Revising the Ambient Air Quality Directive

The Ambient Air Quality Directive sets binding limit values for the maximum concentrations in ambient air of eight pollutants: sulphur dioxide (SO_2), nitrogen dioxide (NO_2) and oxides of nitrogen (NOx), particulate matter (PM_{10} and $PM_{2.5}$), lead (Pb), benzene (C_6H_6) and carbon monoxide (CO). The Directive also sets non-binding target values for ground-level ozone (O_3). Limit or target values are expressed as short-term (8-hour or daily) averages, or long-term (annual) averages, and for some pollutants both kinds are set.

Sub-section 4.1a: Aligning with latest scientific and technical knowledge

The World Health organisation (WHO) has identified guidance values for ambient concentrations of major pollutants to protect human health; these are more stringent than the limit values currently set in the AAQD. The reference levels in the table below include EU limit or target levels and WHO air quality guidelines (AQG).

Table of EU limit or target values vs WHO guidelines for air quality (all levels in µg/m^3 except where otherwise indicated, averaging periods also listed).

Pollutant	**EU reference value**	**WHO reference level**
$PM_{2.5}$	Year (25)	Year (10)
PM_{10}	Day (50)	Year (20)
O_3	8-hour (120)	8-hour (100)
NO_2	Year (40)	Year (40)
BaP	Year (1ng/m^3)	Year (0.12 ng/m^3)
SO_2	Day (125)	Day (20)
CO	8-hour (10mg/m^3)	8-hour (10mg/m^3)
Pb	Year (0.5)	Year (0.5)
C_6H_6	Year (5)	Year (1.7)

Source: EEA

Particulate matter includes several different components. A specific limit value is set for fine particles ($PM_{2.5}$), as long-term exposure to this pollutant has been found to have strong health effects. The AAQD calls for a review of this limit value by 2013, with a view to tightening it indicatively to 20µg/m^3subject to feasibility.

13. Should the indicative limit value for $PM_{2.5}$ of 20 $\mu g/m^3$ for 2020 be made mandatory? *

- Yes
- No
- Don't know

14. Should the $PM_{2.5}$ or other limit values in the AAQD be made more stringent to bring them closer to WHO guidance values? (Please choose one response) *

- No change
- Yes, review the limit values and bring them closer to WHO guidance values
- Bring AAQD limit values closer to WHO guidance values only in the future, once the EU has made further emissions reductions
- Don't know

Sub-section 4.1b: Aligning with latest scientific and technical knowledge (black carbon)

Another component of PM, black carbon (BC), has health impacts and is also a short-lived climate pollutant. BC is one of the constituents of total PM mass, but requirements to separately monitor or reduce BC concentrations are not established in current air quality legislation. Such requirements may help further reducing health impacts and at the same time have a positive synergistic effect with climate change mitigation.

15. Should monitoring and regulation be introduced for black carbon/elemental carbon? (Please choose one response) *

- Yes, introduce monitoring requirement
- Yes, introduce non-binding target value (along with a monitoring requirement)
- Yes, introduce binding target value (along with a monitoring requirement)
- No
- Don't know

16. Should any other components of particulate matter be addressed in the AAQD? (maximum 1200 characters)

Sub-section 4.1c: Aligning with latest scientific and technical knowledge (ozone)

Ground-level ozone is not directly emitted but is formed in the atmosphere through a number of reactions between ozone precursors, the most important of which are VOCs, NOx, CO, and methane (CH_4). Ozone has impacts on human health and also on ecosystems and crops. The AAQD currently sets non-binding target values for ozone to protect human health and vegetation. Ozone is also an effective greenhouse gas.

17. Which binding limit values (if any) should the AAQD set for ozone? (Please choose one response) *

- ○ Replace the current ozone target values with binding limit values set at the same levels
- ○ Replace the current ozone target values with binding limit values set at more stringent levels
- ○ No change
- ○ Don't know

Sub-section 4.2a: Management framework

The limit values for several pollutants have largely been met across the EU, in particular those for sulphur dioxide (SO_2), carbon monoxide (CO) and lead (Pb).

Certain pollutants, such as PM_{10} and NO_2, are regulated both by annual average and short term (daily or hourly) limit values. There can be a strong correlation in practice between compliance with the short-term NO_2 value whenever the yearly limit value is met, and between compliance with the yearly PM_{10} value whenever the short-term PM_{10} value is met.

Deleting some of the limit values would reduce monitoring and reporting costs; on the other hand, mere correlations may not be sufficient to allow elimination of standards from a health perspective, and keeping limit values provides a safeguard for the future.

18. Should any limit values be removed from the AAQD? If so, which? (maximum 1200 characters)

Sub-section 4.2b: Management framework

Other options to reduce air quality management costs may include revising siting criteria for monitoring stations to focus more on the locations where people are generally exposed to ambient air pollution.

Any reductions in air quality management costs would need to be evaluated against the risk to weaken environmental and health protection.

19. Should any *other* monitoring and reporting obligations be reduced in the AAQD? If so, which? (maximum 1200 characters)

Sub-section 4.2c: Management framework

A significant proportion of the EU population still lives in areas, especially cities, where EU limit and target values are exceeded – in particular, for PM, ozone and nitrogen dioxide.

In zones where EU air quality limit values are exceeded, zone-specific action plans for attainment are required. Recent experience indicates that local and regional authorities face substantial difficulties in meeting their responsibilities, as they lack the means to control pollution from outside their regions and from sources, and so must resort to more expensive and less effective local actions. One option to address this is to consolidate zone-specific plans into national action plan, to ensure their coherence. Another option is to focus on transboundary pollution flows that affect the attainment of EU limit values; the AAQD already recommends cooperation between Member States to address air quality problems, but there is little evidence of effective use of the existing provisions.

20. Should zone-specific plans be consolidated into coordinated national plans? (Please choose one response) *

- Yes
- No
- Don't know

21. Should cooperation among Member States be reinforced to better address transboundary pollution flows that affect local air quality problems? (Please choose one response) *

- Yes, the Member States concerned should be legally obliged to prepare joint air quality plans in cases of significant transboundary pollution
- Yes, cooperation should be reinforced, but in other ways (pls specify in following question).
- No
- Don’t know

22. Please feel free to provide comments on the options for the revision of the AAQ Directive: (maximum 1200 characters)

Section 5/6: Revising the National Emission Ceilings Directive (NECD)

The National Emission Ceilings Directive establishes – for 2010 and beyond – upper ceilings for the emission of four pollutants – sulphur dioxide (SO_2), nitrogen oxides (NOx), ammonia (NH_3) and non-methane volatile organic compounds (NMVOC). The ceilings are set so as to limit the long-range transport of air pollutants and their associated health and environmental burden.

Sub-section 5.1: Aligning with latest scientific and technical knowledge

With the incorporation of the revision of the Gothenburg Protocol into EU law, ceilings will be set for $PM_{2.5}$, a component of primary particulate matter. To ensure coherence with the Gothenburg Protocol, ceilings for $PM_{2.5}$ will need to be established also for a revised NEC Directive. The revised NEC Directive could however go further and set ceilings also for black carbon (another component of particulate matter with both health and climate change impacts), or for other pollutants, provided that appropriate emission inventories are in place.

23. Should national emission ceilings be adopted for black carbon/elemental carbon? (Please choose one response)

- ○ Yes
- ○ No
- ○ Don't know

24. Should national emissions ceilings be introduced for other new pollutants? (Please provide written comments if you would like to propose ceilings for other pollutants) (maximum 1200 characters)

Sub-section 5.2a: Management framework

The 2012 revision of the Gothenburg Protocol introduced the option for countries to propose adjustment of their ceilings or emission inventories for compliance check. Such adjustments would however only be allowed in specific circumstances, where a ceiling may be exceeded solely due to the fact that the inventory methodology (the way in which total levels of emissions of pollutants are calculated) has been improved to bring it in in line with the latest scientific knowledge.

Inter-annual variability of the main emission drivers, such as economic activity or weather (in turn affecting demand for heating and cooling) may compromise a Member State's ability to meet emission ceilings in the short term. A possible solution would be to allow Member States to demonstrate compliance on a multi-year average basis. This would in practice mean that the ceilings are slightly weakened.

25. Which mechanisms for flexibility should be introduced into the NEC Directive management framework? (Please choose one or more responses)

- ☐ Allowing Member State compliance for the Directive's ceilings to be measured on the basis of a multi-year average
- ☐ Allowing limited adjustments of Member State emission ceilings, under specific circumstances and after approval by the Commission
- ☐ Allowing limited adjustments of Member State emission inventories for compliance check, under specific circumstances and after approval by the Commission
- ☐ Other (please specify below)
- ☐ No flexibility mechanisms should be introduced
- ☐ Don't know

Sub-section 5.2b: Management framework

Competent authorities for local air quality management are often local administrations, whereas compliance with national emission ceilings is managed at national level. Coherence between national emission reduction plans and local air quality plans could be improved by including additional provisions in the NEC Directive that would require the Member States to take explicit account of existing and projected air quality non-compliances when developing emission reduction plans, which could then be optimised to deliver also air quality benefits at the same time.

26. Should coordination be required between the national and local levels in respect of emissions reduction measures and local air quality management? (Please choose one response) *

- ○ Yes
- ○ No
- ○ Don't know

27. Please feel free to provide comments on the options for the revision of the NEC Directive: (maximum 1200 characters)

Section 6/6: Addressing major air pollution sources

EU legislation also addresses major air pollution sources, including: road transport, non-road machinery, combustion plants; industry; agriculture and shipping

The revised Thematic Strategy on Air Pollution could identify measures to address those, among these sources, which offer the most potential to deliver further emission reduction in a cost-effective way.

For further information regarding major air pollution sources, please see Section 5.4 and Annex B of the **explanatory notes accompanying the public consultation**.

Sub-section 6.1: Road transport

The EU has set emission standards for all major classes of vehicles circulating on road, including heavy-duty vehicles (such as trucks and buses), light-duty vehicles such as passenger cars, and L-category vehicles (motorcycles and other small vehicles). The standards cover emissions of carbon monoxide (CO), hydrocarbons, nitrogen oxides (NOx) and particulates (PM).

For heavy-duty vehicles, the most recent Euro VI standard, introduced for new vehicles as of 2012, represents a major reduction in emissions from new vehicles; accordingly, substantial air quality improvements are projected to be delivered with the progressive retirement of obsolete vehicles and substitution by newer ones.

The Commission is currently finalising the process of revising emission standards for L-category vehicles.

For passenger cars and other light-duty vehicles, the Euro 5 standards came into force for the registration and sale of new vehicles in 2011, and the more stringent Euro 6 standards will come into force in 2014-2015. However, despite the progressively tighter restrictions on new vehicle emissions, polluting emissions in particular from diesel light-duty vehicles have not decreased as far as expected, as real-world emissions are higher than the intended levels prescribed by the Euro standards. Moreover, the increasing share of diesel engines in the passenger vehicle fleet has also contributed to these emissions. As a result, road transport continues to contribute to a significant share of air quality problems in the EU. A new test procedure will be introduced along with the Euro 6 standards, to ensure that the divide between type approval limit values and real world emissions is minimised. However, the technical characteristics and time of introduction of the new test procedure are not yet fully defined.

28. Which additional measures should be taken to address air emission from road transport? (Please rank as many of the following options as you wish in order of preference from 1 (most preferred) to 8 (least preferred)

a:1
b:2
c:3
d:4
e:5
f:6
g:7
h:8

	a	b	c	d	e	f	g	h
Introduce with minimum delay the new test procedure to ensure that real world emissions of Euro 6 light duty diesel vehicles are as close as possible to the type approval limit values								
Strengthen EU- wide reauirements for in-service compliance with emissions standards to ensure that light duty vehic;es on European roads continue to produce low emissions over their lifetime								
Develop a new more stringent standard to be mandatory for motor vehicles after 2020								
Develop a supplementary more stringent standard, not mandatory, to be used by national and local governments in a harmonised way wherever air quality exceeds EU standards (e.g. to establish low emission zones), or to establish incentives at MS level to increase penetration of cleaner vehicles								
Introduce standards to retrofit existing heavy duty vehicles (e.g. trucks, buses)								
Introduce a mandatory road charging scheme for heavy duty vehicles that incorporates air pollutant emissions ("eurovignette directive")								
Develop additional test-cycle components specific to the driving patterns of special purpose urban vehicles (e.g. buses and refuse collection vehicles), to ensure that								
Other (please provide comments in question 29)								
No additional measures should be introduced								
Don't know								

29. Please feel free to comment on your answers regarding regulation of road transport emissions: (maximum 1200 characters)

Sub-section 6.2: Off-road transport and non-road machinery

Non-Road Mobile Machinery such as excavators, bulldozers and compressors also contribute to air pollution by emitting carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NOx) and particulate matter. EU policy is progressively reducing these emissions. Currently under discussion are: in the short term, to extend the scope of application of the current regulation (Stage IV) to additional emission sources, such as expanding the range of power classes covered (smaller and larger) and the type of application (to include inland water vessels as well as stationary engines); in the longer term, to develop and introduce a new set of emission requirements to become Stage V standards.

30. Which additional measures should be introduced for non-road machinery? (Please rank as many of the following options as you wish in order of preference from 1 (most preferred) to 5 (least preferred)

a: 1

b: 2

c: 3

d: 4

e: 5

	a	b	c	d	e
Extend the scope of application of current Stage IV NRMM standards to additional power classes and applications, including stationary applications	○	○	○	○	○
Introduce as soon as possible a more stringent Stage V standard for non-road machinery, aligned with the limit values of the most stringent Euro VI regulation for heavy duty road vehicles, which would further reduce especially PM emissions.	○	○	○	○	○
Ensure that approval emission tests reflect the machinery's emissions in real circumstances	○	○	○	○	○ world
Ensure that there are incentives for retrofitting and/or replacing older inland waterway vessels' engines by newer and cleaner ones	○	○	○	○	○
Other (please provide comments in question 31)	○	○	○	○	○
No additional measures should be introduced	○	○	○	○	○
Don't know	○	○	○	○	○

31. Please feel free to comment on your answers regarding regulation of emissions from off-road transport and non-road machinery: (maximum 1200 characters)

Sub-section 6.3: Agricultural sector

The agricultural sector is the main contributor to emissions of ammonia (NH_3), which causes eutrophication and is a precursor of secondary PM. These emissions can be reduced through improved manure storage, management and spreading techniques, low nitrogen animal feeding techniques, and fertiliser management. Ammonia emissions from agriculture have reduced only rather slowly in the last decade and are not expected to reduce in the future unless further action is taken.

Also, the burning of agricultural waste is emerging as an important source of primary particulate matter (PM) in some areas of the EU. Some Member States have already banned or otherwise restricted open burning of agricultural waste.

32. Which additional measures should be taken to address air emissions from the agricultural sector? (Please rank as many of the following options as you wish in order of preference from 1 (most preferred) to 5 (least preferred)

a: 1
b: 2
c: 3
d: 4
e: 5

	a	b	c	d	e
Set tighter emission ceilings for ammonia for 2020 and 2030 in the NEC Directive, leaving flexibility to Member States on how these ceilings can best be reached	○	○	○	○	○
Where cost effective, introduce new or revise existing EU legislation to establish EU-wide specific rules for e.g. improved manure storage, management and spreading techniques	○	○	○	○	○
Promote good practices in manure management and manure spreading in Member States through support from the Rural Development Fund	○	○	○	○	○
Introduce measures to ban or restrict the burning of agricultural waste	○	○	○	○	○
Other (please provide comments in question 33)	○	○	○	○	○
No additional measures should be introduced	○	○	○	○	○
Don't know	○	○	○	○	○

33. Please feel free to comment on your answers regarding regulation of emissions from the agricultural sector: (maximum 1200 characters)

Sub-section 6.4: Small/medium combustion sector

EU legislation sets emissions standards for combustion plants of 50 MW or more.

Emissions from residential heating, especially related to biomass and solid fuels such as coal, are a source of particulate matter (PM) that is not currently regulated; however the Commission intends to regulate in 2013 emissions from installations up to 400-1000 kW (no decision has yet been made on the capacity threshold) under the Ecodesign Directive (2009/125/EC).

Pollutant emissions from combustion installations of capacity higher than the Ecodesign Directive threshold but lower than 50 MW are currently not regulated at EU level, except in particular cases.

34. Which additional measures should be taken to address air emissions from small and medium combustion installations (below 50 MW)? (Please choose one or more responses)

- ☐ Extend in future the forthcoming harmonised limit values under the Ecodesign Directive (2009/125/EC) to control emissions from installations above the Ecodesign capacity threshold (please elaborate in question 35 up to which capacity level).
- ☐ Develop a supplementary and more stringent standard for installations below the Ecodesign capacity threshold for use in national and local measures such as fiscal incentives to be applied in zones that are in non-compliance with air quality limits
- ☐ Regulate combustion installations above the Ecodesign capacity threshold but below the 50MW threshold set in the Industrial Emissions Directive (IED)
- ☐ No additional measures should be introduced
- ☐ Other (please elaborate below)
- ☐ Don't know

Sub-section 6.4: Small/medium combustion sector (continued)

Installations below 50 MW cover a wide capacity range, and different approaches might be preferred for different capacity classes. A "full" permitting regime would be a permitting procedure including extensive public participation (such as under the IPPC Directive 2008/1/EC), whilst in a "light" permitting regime, such consultation would not be required. In a so-called "registration" regime, the authorities are only notified of the operation of the installation, without having to give consent for that operation in the form of a decision.

The option "EU-wide emission limit values which are only mandatory in zones where air quality issues exist" should be considered in combination to the other measures mentioned, and would primarily serve as an additional measure in combination with one of the first three measures, imposing stricter requirements in the zones with air quality problems.

34a. Which measures should be introduced to control emissions from combustion installations above the Ecodesign threshold but below 50 MW? (Please choose one or more responses)

- ☐ A "full" permitting regime with EU-wide emission limit values
- ☐ A “light” permitting regime or registration regime with EU-wide emission limit values
- ☐ Product standards, applicable for new installations only
- ☐ EU-wide emission limit values or standards which are only mandatory in zones where air quality issues exist
- ☐ Other (please elaborate below)
- ☐ Don’t know

35. Please feel free to comment on your answers regarding regulation of emissions from the small/medium combustion sector: (maximum 1200 characters)

Sub-section 6.5: Shipping sector

Parties to Annex VI of the International Convention on the Prevention of Pollution from Ships (MARPOL) can designate Emission Control Areas (ECAs) where, compared to non-ECAs, more stringent fuel standards for the maximum sulphur content (SECAs) or lower emission values for emissions of nitrogen oxides (NECAs) apply. At present, two SECAs are designated in Europe’s regional seas – the Baltic Sea and the North Sea including the English Channel. So far, no European sea area has been designated as NECA. In order to declare a European regional sea as an ECA, EU Member States bordering such an area, together with non EU Member States concerned, submit an application for approval to the International Maritime Organisation (IMO).

In 2008, parties to MARPOL agreed to stepwise lower the maximum sulphur content of marine fuels, and such provisions have been introduced in the recently adopted amendment of Directive 1999/32/EU on the reduction of the sulphur content of certain fuels. In the amending Directive, Co-legislators ask the Commission to consider the possibility of reducing air pollution from shipping, including in the territorial seas, as part of its air quality review in 2013.

36. Which additional measures should be taken to address air emissions from the shipping sector? (Please choose one or more responses)

- ☐ Promote the extension of the Sulphur Emission Control Areas to additional EU sea areas such as the Irish Sea, the Gulf of Biscay, the Mediterranean and/or the Black Sea provided that such a measure is cost-effective.
- ☐ Promote the designation of NOx Emission Control Areas in EU regional seas where cost-effective (those listed above and/or the Baltic and the North Sea including the English Channel) provided that such a measure is cost-effective.
- ☐ Introduce requirements for PM emission controls in EU regional seas where cost-effective
- ☐ Reduce air pollution and greenhouse gas emissions from ships in EU waters by setting speed restrictions.
- ☐ Aim for a reduction of total NOx emissions from shipping by retrofitting all vessels with NOx abatement equipment.
- ☐ Require continuous monitoring of the emissions of sulphur dioxide, NOx, particulate matter (fine dust) as it is practised on many industrial installations on land.
- ☐ Other (please elaborate below)

37. Please feel free to comment on your answers regarding regulation of emissions from the shipping sector: (maximum 1200 characters)

Final comments

38. Please feel free to provide any further comments related to the revision of the Thematic Strategy on Air Pollution: (maximum 2400 characters)

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